SHARP®

XV-Z91E

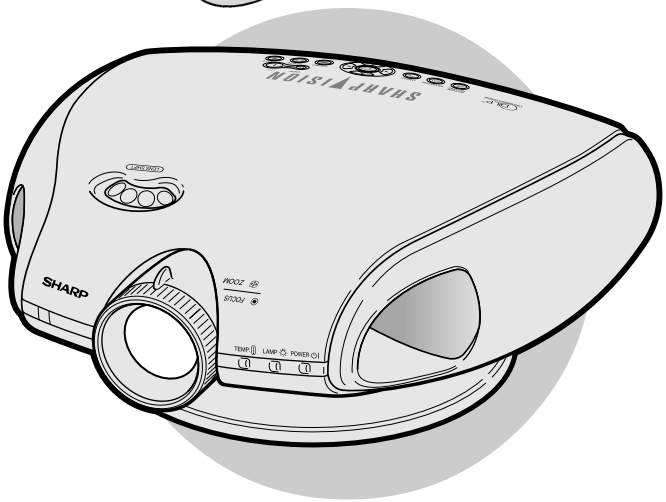
PROJECTOR
PROJEKTOR
PROJECTEUR
PROJEKTOR
PROYECTOR
PROIETTORE
PROJECTOR

OPERATION MANUAL
BEDIENUNGSANLEITUNG
MODE D'EMPLOI
BRUKSANVISNING
MANUAL DE MANEJO
MANUALE DI ISTRUZIONI
GEBRUIKSAANWIJZING

ENGLISH
DEUTSCH
FRANÇAIS
SVENSKA
ESPAÑOL
ITALIANO
NEDERLANDS

PICTURE BY DLP™ A TEXAS INSTRUMENTS TECHNOLOGY

香港電器安全規格
(國際電工委員會規格適合)



This equipment complies with the requirements of Directive 89/336/EEC and 73/23/EEC as amended by 93/68/EEC.

Dieses Gerät entspricht den Anforderungen der EG-Richtlinien 89/336/EWG und 73/23/EWG mit Änderung 93/68/EWG.

Ce matériel répond aux exigences contenues dans les directives 89/336/CEE et 73/23/CEE modifiées par la directive 93/68/CEE.

Dit apparaat voldoet aan de eisen van de richtlijnen 89/336/EEG en 73/23/EEG, gewijzigd door 93/68/EEG.

Dette udstyr overholder kravene i direktiv nr. 89/336/EEC og 73/23/EEC med tillæg nr. 93/68/EEC.

Quest' apparecchio è conforme ai requisiti delle direttive 89/336/EEC e 73/23/EEC come emendata dalla direttiva 93/68/EEC.

Η εγκατάσταση αυτή ανταποκρίνεται στις απαιτήσεις των οδηγιών της Ευρωπαϊκής Ενωσης 89/336/ΕΟΚ και 73/23/ΕΟΚ, όπως οι κανονισμοί αυτοί συμπληρώθηκαν από την οδηγία 93/68/ΕΟΚ.

Este equipamento obedece às exigências das directivas 89/336/CEE e 73/23/CEE, na sua versão corrigida pela directiva 93/68/CEE.

Este aparato satisface las exigencias de las Directivas 89/336/CEE y 73/23/CEE, modificadas por medio de la 93/68/CEE.

Denna utrustning uppfyller kraven enligt riktlinjerna 89/336/EEC och 73/23/EEC så som kompletteras av 93/68/EEC.

Dette produktet oppfyller betingelsene i direktivene 89/336/EEC og 73/23/EEC i endringen 93/68/EEC.

Tämä laite täyttää direktiivien 89/336/EEC ja 73/23/EEC vaatimukset, joita on muutettu direktiivillä 93/68/EEC.

SPECIAL NOTE FOR USERS IN THE U.K.

The mains lead of this product is fitted with a non-rewireable (moulded) plug incorporating a 3A fuse. Should the fuse need to be replaced, a BSI or ASTA approved BS 1362 fuse marked ♆ or ◈ and of the same rating as above, which is also indicated on the pin face of the plug, must be used.
Always refit the fuse cover after replacing the fuse. Never use the plug without the fuse cover fitted.
In the unlikely event of the socket outlet in your home not being compatible with the plug supplied, cut off the mains plug and fit an appropriate type.

DANGER

The fuse from the cut-off plug should be removed and the cut-off plug destroyed immediately and disposed of in a safe manner.
Under no circumstances should the cut-off plug be inserted elsewhere into a 13A socket outlet, as a serious electric shock may occur.
To fit an appropriate plug to the mains lead, follow the instructions below:

IMPORTANT

The wires in the mains lead are coloured in accordance with the following code:
Blue : Neutral
Brown : Live
As the colours of the wires in the mains lead of this product may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows;
- The wire which is coloured blue must be connected to the plug terminal which is marked N or coloured black.
- The wire which is coloured brown must be connected to the plug terminal which is marked L or coloured red.

Ensure that neither the brown nor the blue wire is connected to the earth terminal in your three-pin plug.
Before replacing the plug cover make sure that:
- If the new fitted plug contains a fuse, its value is the same as that removed from the cut-off plug.
- The cord grip is clamped over the sheath of the mains lead, and not simply over the lead wires.

IF YOU HAVE ANY DOUBT, CONSULT A QUALIFIED ELECTRICIAN.

Before using the projector, please read this operation manual carefully.

OPERATION MANUAL

ENGLISH

IMPORTANT

For your assistance in reporting the loss or theft of your Projector, please record the Serial Number located on the bottom of the projector and retain this information. Before recycling the packaging, please be sure that you have checked the contents of the carton thoroughly against the list of “Supplied Accessories” on page 11.

Model No.: XV-Z91E

Serial No.:

WARNING:

Intense light source. Do not look into the beam or view it directly. Be especially careful that children do not look directly into the beam.

WARNING:

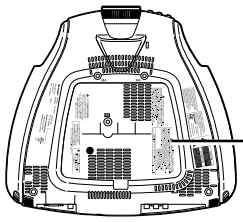
To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.

CAUTION:

To reduce the risk of electric shock, do not remove cabinet. No user-serviceable parts are inside. Refer servicing to qualified service personnel.

WARNING:

The cooling fan in this projector continues to run for about 90 seconds after the projector is turned off. During normal operation, when turning the power off always use the **OFF** button on the projector or on the remote control. Ensure the cooling fan has stopped before disconnecting the power cord.
DURING NORMAL OPERATION, NEVER TURN THE PROJECTOR OFF BY DISCONNECTING THE POWER CORD. FAILURE TO OBSERVE THIS WILL RESULT IN PREMATURE LAMP FAILURE.



Caution Concerning the Lamp Replacement

There is potential glass particles hazard if the lamp ruptures.

⚠ LAMP REPLACEMENT CAUTION

BEFORE REMOVING THE SCREW, DISCONNECT POWER CORD.
HOT SURFACE INSIDE. ALLOW 1 HOUR TO COOL BEFORE REPLACING THE LAMP. REPLACE WITH SAME SHARP LAMP UNIT TYPE BQC-XVZ90+++1 ONLY. UV RADIATION : CAN CAUSE EYE DAMAGE. TURN OFF LAMP BEFORE SERVICING.
MEDIUM PRESSURE LAMP : RISK OF EXPLOSION.
POTENTIAL HAZARD OF GLASS PARTICLES IF LAMP HAS RUPTURED. HANDLE WITH CARE. SEE OPERATION MANUAL.

⚠ PRECAUTIONS A OBSERVER LORS DU REMPLACEMENT DE LA LAMPE.

DEBRANCHER LE CORDON D'ALIMENTATION AVANT DE RETIRER LES VIS.
L'INTERIEUR DU BOITIER ETANT EXTREMEMENT CHAUD, ATTENDRE 1 HEURE AVANT DE PROCEDER AU REMPLACEMENT DE LA LAMPE.
NE REMPLACER QUE PAR UNE LAMPE SHARP DE TYPE BQC-XVZ90+++1.
RAYONS ULTRAVIOLETS : PEUVENT ENDOMMAGER LES YEUX.
ETEINDRE LA LAMPE AVANT DE PROCEDER A L'ENTRETIEN.
LAMPE A MOYENNE PRESSION : RISQUE D'EXPLOSION.
DANGER POTENTIEL DE PARTICULES DE VERRE EN CAS D'ECLATEMENT DE LA LAMPE.
A MANIPULER AVEC PRECAUTION, SE REPORTER AU MODE D'EMPLOI.

WARNING:

Some IC chips in this product include confidential and/or trade secret property belonging to Texas Instruments. Therefore you may not copy, modify, adapt, translate, distribute, reverse engineer, reverse assemble or discompile the contents thereof.

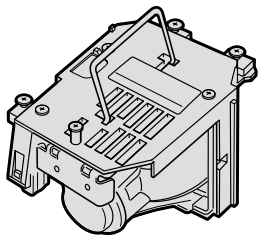
IMPORTANT SAFEGUARDS

ATTENTION: Please read all of these instructions before you operate your Projector for the first time. Save these instructions for future reference.

For your own protection and prolonged operation of your Projector, be sure to read the following "IMPORTANT SAFEGUARDS" carefully, before use.
This projector has been engineered and manufactured to ensure your personal safety. But IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARDS. In order not to defeat the safeguards incorporated into this Projector, observe the following basic rules for its installation, use and servicing.

1. Unplug the Projector from the wall outlet before cleaning.
2. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
3. Do not use attachments not recommended by the Projector manufacturer, as they may cause hazards.
4. Do not use the Projector near water; for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, etc. Never spill liquid into the projector.
5. Do not place the Projector on an unstable cart, stand, or table. The Projector may fall, which may cause serious injury to a child or an adult, and/or serious damage to the unit.
6. Wall or Ceiling Mounting—The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
7. Projector equipment and cart combinations should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.

8. Slots and openings in the cabinet back and bottom are provided for ventilation. To ensure reliable operation of the Projector and to protect it from overheating, these openings must not be blocked or covered. The openings should never be covered with cloth or other material.
9. This Projector should never be placed near or over a radiator or heating vent. The Projector should not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.
10. The Projector should be operated only from the type of power source indicated on the back of the projector or in the specifications. If you are not sure of the type of power supplied to your home, consult your Projector dealer or local power company.
11. Do not place the Projector where the cord will be abused by persons walking on it.
12. Follow all warnings and instructions marked on the Projector.
13. To prevent damage to the projector due to lightning and power-line surges, unplug the projector from the power outlet, when not in use.
14. Do not overload wall outlets and extension cords with too many products, because this can result in fire or electric shock.
15. Never push objects of any kind into the Projector through the cabinet slots as they may touch high-voltage points or cause a short circuit. This could result in a fire or electric shock.
16. Do not attempt to service the Projector yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
17. Unplug the Projector equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    a. When the power cord or plug is damaged or frayed.
    b. If liquid has been spilled into the Projector.
    c. If the Projector has been exposed to rain or water.
    d. If the Projector does not operate normally when you follow the operating instructions. Adjust only those controls that are covered by the operating instructions, as improper adjustment of other controls may cause damage and will often require extensive work by a qualified technician to restore the Projector to normal operation.
    e. If the Projector has been dropped or the cabinet has been damaged.
    f. When the Projector exhibits a distinct change in performance—this indicates a need for service.
18. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original parts. Unauthorised substitutions may result in fire, electric shock, or other hazards.
19. This Projector is provided with one of the following types of plugs. If the plug should fail to fit into the power outlet, please contact your electrician.
    Do not defeat the safety purpose of the plug.
    a. Two-wire type mains plug.
    b. Three-wire grounding type mains plug with a grounding terminal.
    This plug will only fit into a grounding type power outlet.



Caution Concerning the Lamp Unit

There is a potential hazard of glass particles if the lamp ruptures. In case of lamp rupture, contact your nearest Sharp Authorised Projector Dealer or Service Centre for a replacement.
See “Replacing the Lamp” on page 46.

This caution is found at the bottom of the projector. See “Caution Concerning the Lamp Replacement” on page 2 for its location.

⚠ LAMP REPLACEMENT CAUTION

BEFORE REMOVING THE SCREW, DISCONNECT POWER CORD. HOT SURFACE INSIDE. ALLOW 1 HOUR TO COOL BEFORE REPLACING THE LAMP. REPLACE WITH SAME SHARP LAMP UNIT TYPE BQC-XVZ90+++1 ONLY. UV RADIATION : CAN CAUSE EYE DAMAGE. TURN OFF LAMP BEFORE SERVICING. MEDIUM PRESSURE LAMP : RISK OF EXPLOSION. POTENTIAL HAZARD OF GLASS PARTICLES IF LAMP HAS RUPTURED. HANDLE WITH CARE. SEE OPERATION MANUAL.

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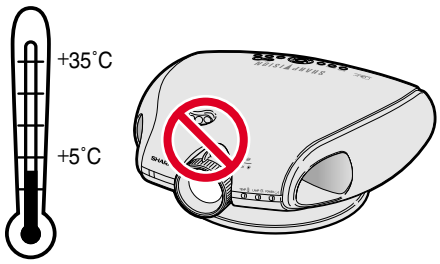
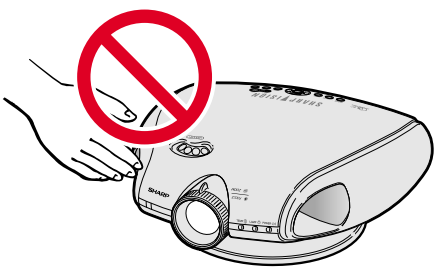


Cautions Concerning the Setup of the Projector

For minimal servicing and to maintain high image quality, SHARP recommends that this projector be installed in an area free from humidity, dust and cigarette smoke. When the projector is subjected to these environments, the lens and part of filter must be cleaned more often than usual. As long as the projector is properly maintained in this manner, use in these environments will not reduce the overall operation life. Please note that all internal cleaning must be performed by a Sharp Authorised Projector Dealer or Service Centre.

- Do not expose the projector to extreme heat or cold.
  Operating temperature: +5°C to +35°C
  Storage temperature: –20°C to +60°C



Notes on Operation

- The exhaust ventilative hole, the lamp cage cover and adjacent areas may get extremely hot during projector operation. To prevent injury, do not touch these areas until they have sufficiently cooled down.
- Allow at least 30 cm of space between the exhaust ventilative hole and the nearest wall or obstruction.
- If the cooling fan becomes obstructed, a protection device will automatically turn off the projector lamp. This does not indicate a malfunction. Remove the projector power cord from the wall outlet and wait at least 10 minutes. Then turn on the power by plugging the power cord back in. This will return the projector to the normal operating condition.

WARNING: High brightness light source. Do not stare into the beam of light, or view directly. Be especially careful that children do not stare directly into the beam of light.

IMPORTANT SAFEGUARDS

Temperature Monitor Function

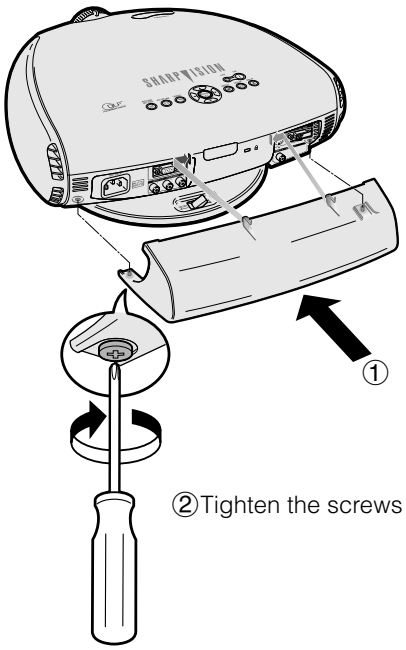
If the projector starts to overheat due to setup problems, "TEMP." and "" will blink in the lower-left corner of the picture. If the temperature continues to rise, the lamp will turn off, the TEMPERATURE WARNING indicator on the projector will blink, and after a 90-second cooling-off period the power will shut off. Refer to "Lamp/Maintenance Indicators" on page 44 for details.

NOTE

- The cooling fan regulates the internal temperature, and its performance is automatically controlled. The sound of the fan may change during projector operation due to changes in the fan speed.

Lamp Monitor Function

When the projector is turned on after the lamp has been used for 2,400 hours, "LAMP" and "" will blink in the lower-left corner of the picture to advise you to replace the lamp. See page 46 for lamp replacement. If the lamp has been used for 2,500 hours, the projector power will automatically turn off and the projector will enter standby mode. Refer to "Lamp/Maintenance Indicators" on page 44 for details.



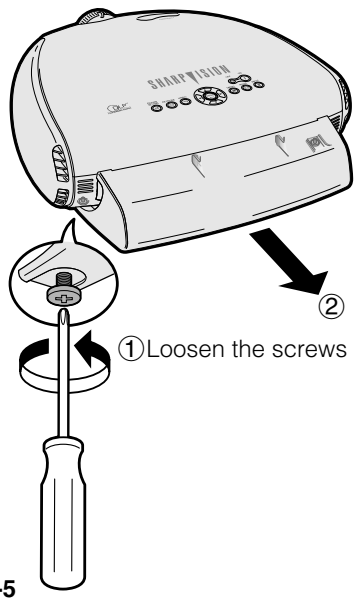
Using the Terminal Cover

When the projector is used on a desktop, high mounted or ceiling mounted, attach the terminal cover (supplied) to hide the connecting cables.

Attaching the Terminal Cover

① Align with the tabs on the projector and then press the terminal cover in the direction of the arrow.

② Tighten the two screws on the bottom of the projector.



Removing the Terminal Cover

① Loosen the two screws on the bottom of the projector.

② Raise the terminal cover and pull it out in the direction of the arrow.

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Outstanding Features

1. DMD™*1 (Digital Micromirror Device) Chip
The DMD Chip allows for a higher contrast image. It enables smoother expression of details of an image, and high picture quality for an exciting theatre experience.

*1 Digital Light Processing, DLP, Digital Micromirror Device and DMD are trademarks of Texas Instruments.

2. Five Speed Primary Colour Wheel
The colour wheel consists of only the three primary colours of the light and creates a higher contrast image with high colour purity.

3. Advanced Video Circuitry
The video circuit setup is designed for obtaining optimal images from audiovisual equipment. The circuit optimizes high optical performance that originates in the DMD chip and the five speed primary colour wheel, to realise outstanding video images.

4. Low Noise Design
A new optical engine has been developed for this product to minimise fan noise for undisturbed viewing.

5. Lens Shift Function
The digital shift function optically adjusts the vertical position of images. The function allows for simple adjustment when setting up the projector for the first time.

6. 2D Keystone Correction
The 2D keystone correction function electrically corrects the size of projected images. The function enables diagonal projection and the wider range settings.

7. For use with DTV*2
Allows projection of DTV images and 16:9 wide-screen images when connected to a DTV decoder or similar video systems.

*2 DTV is the umbrella term used to describe the new digital television system in the United States.

8. Easy-to-use Graphical User Interface (GUI)
A multi-colour menu system, which allows for simple image adjustments.

9. Colour Temperature Adjustment
The function can be used to adjust the colour temperature to suit the type of image input to the projector.

10. Gamma Correction Function
The gamma value setting can be adjusted according to the input source for optimal image contrast.

11. Picture Setting Function
The values in various adjustment settings can be stored. The function can be used to select the values to suit the type of image input to the projector by pressing the **PICTURE SETTING** button on the projector or on the remote control.

12. Component Video Input
Utilises a component video input signal (Y, P_B, P_R). The video signal is input as separate components to provide superior colour and image quality.

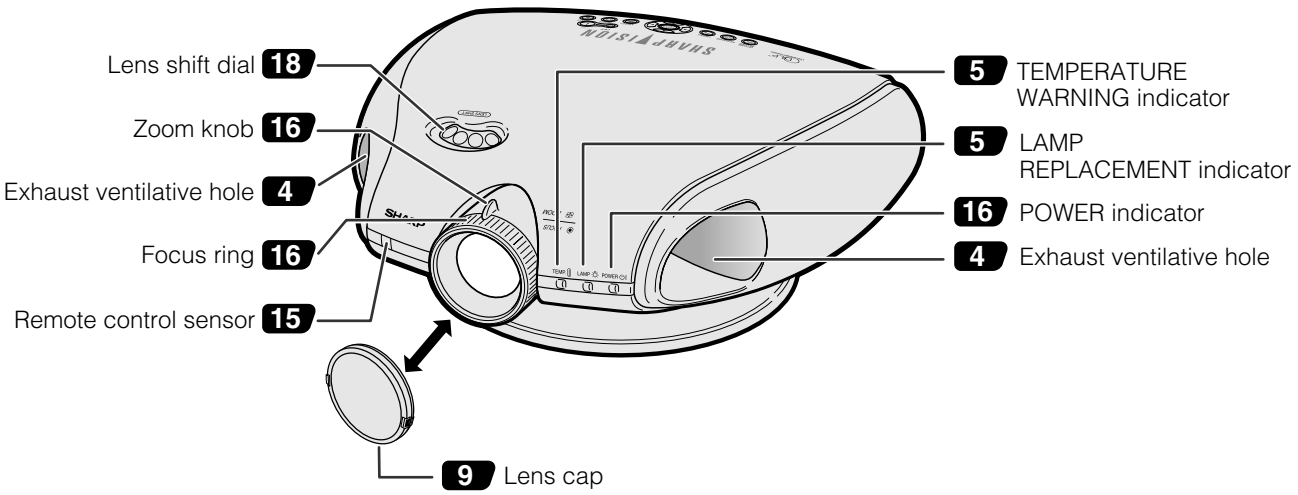
13. Direct Computer Compatibility
A multi-scan RGB input accepts signals from VGA (640 dots × 480 lines) and Macintosh (from 13" compatible computers) without the need for any additional hardware.

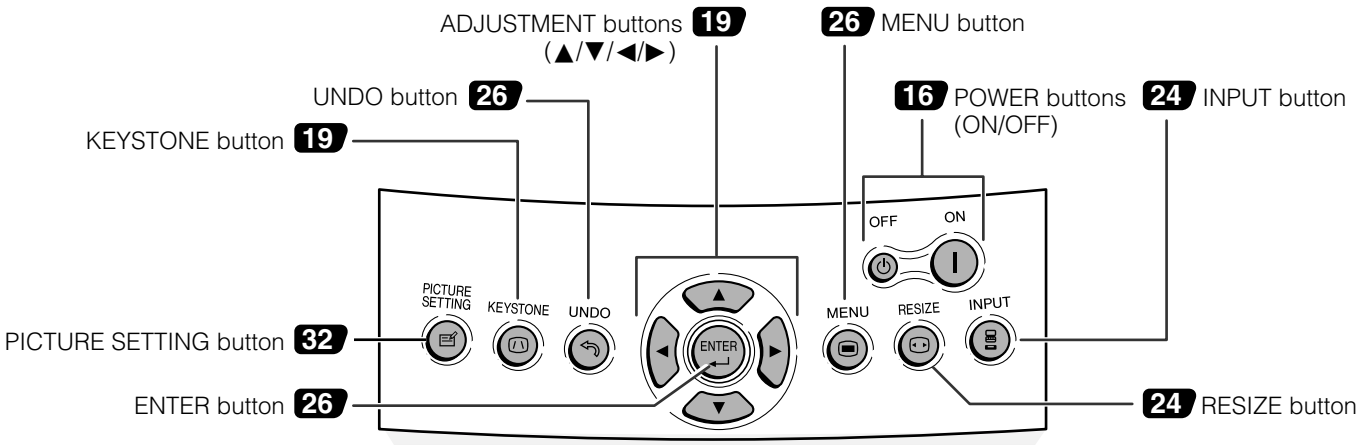
Part Names

Numbers next to the part names refer to the main pages in this manual where the topic is explained.

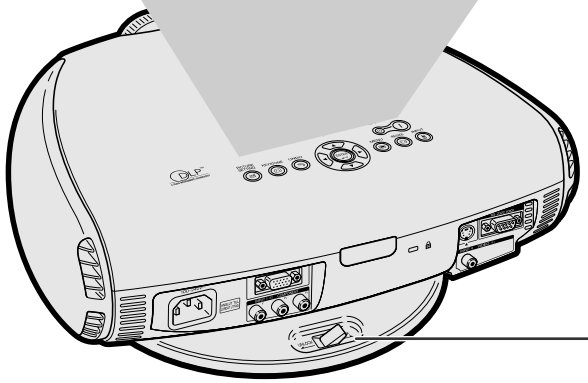
Projector

Front and Top View





Side and Rear View



Part Names

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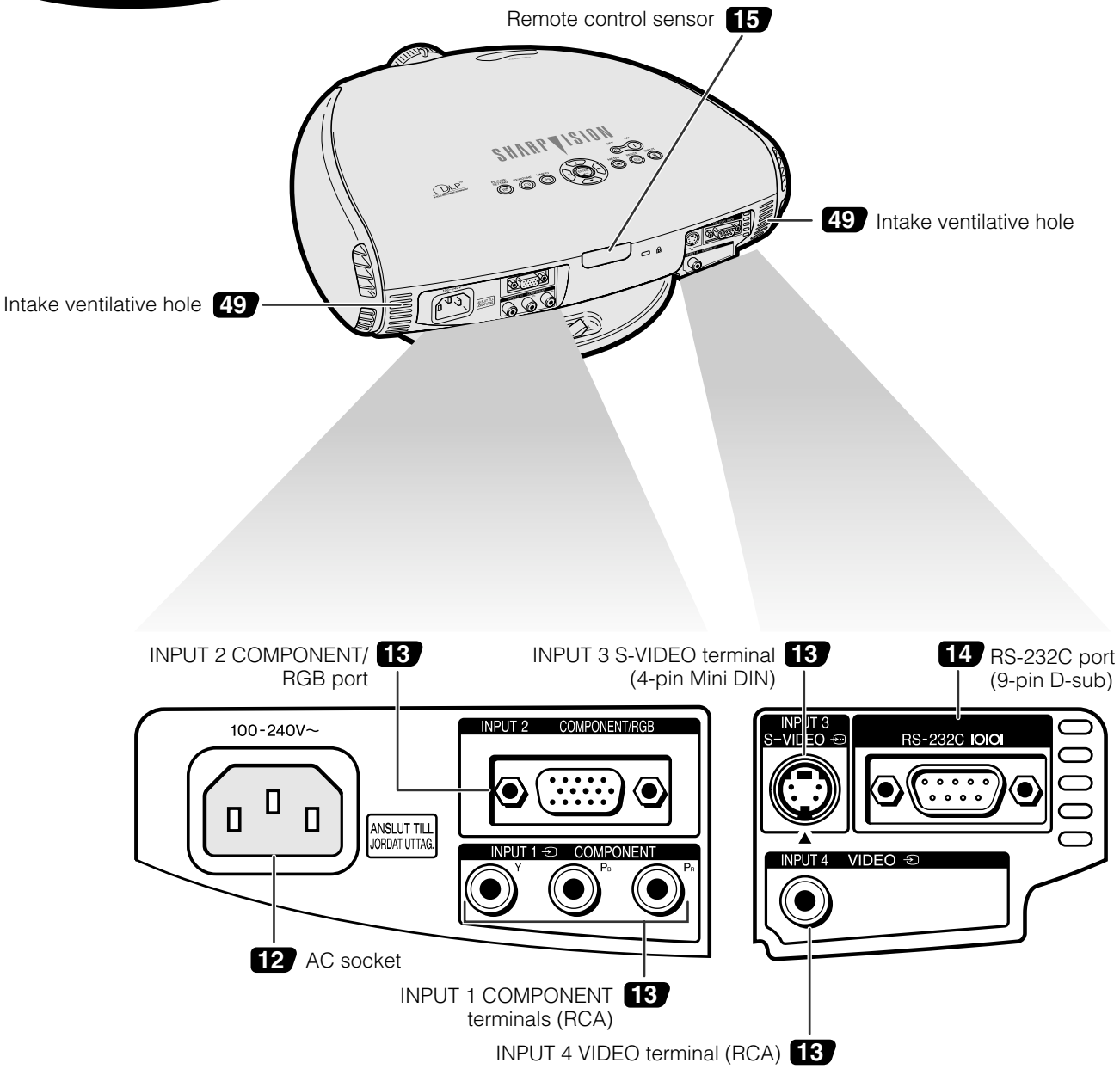
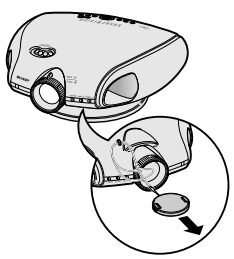
Projector

Side and Rear View



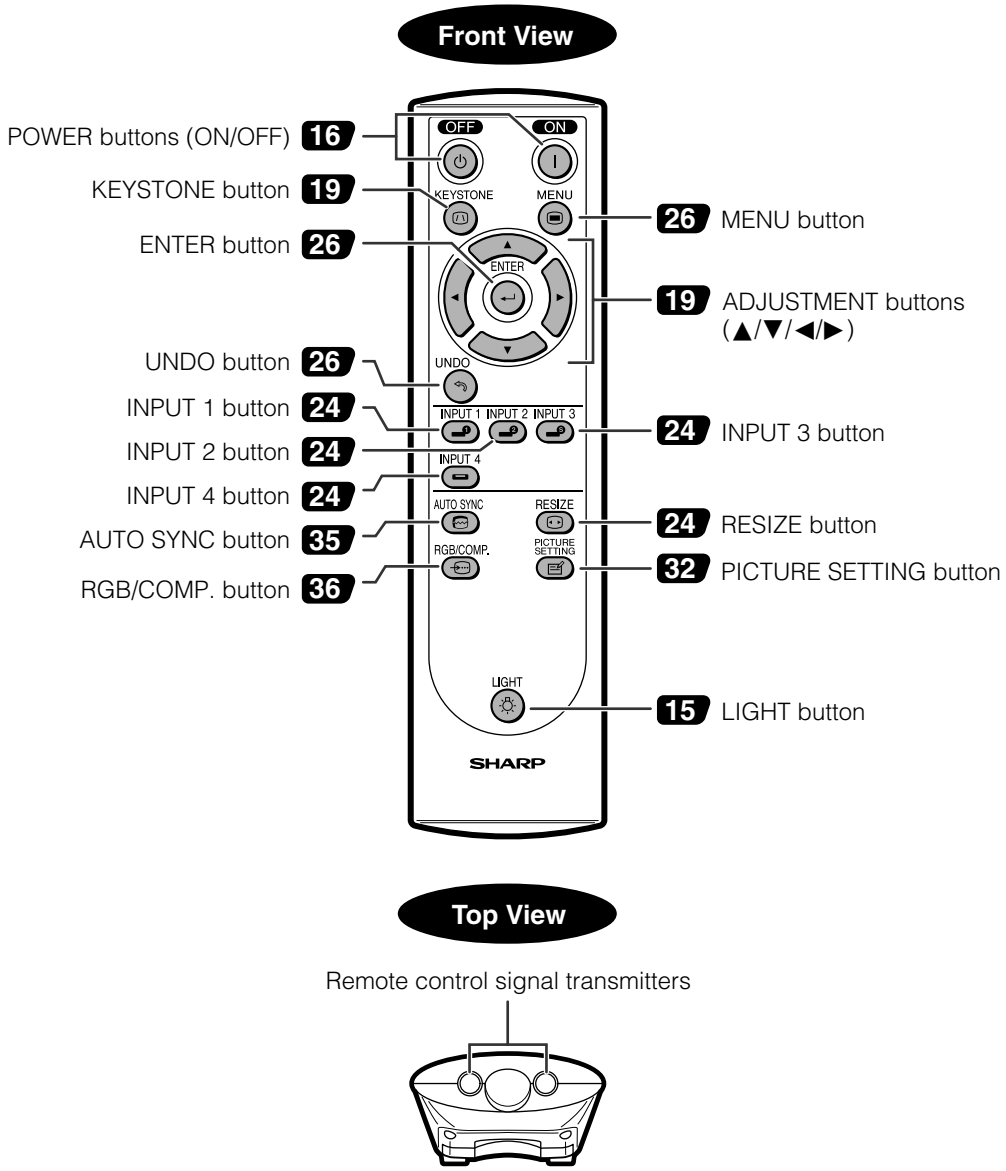
Attaching the Lens Cap

After putting the lens cap strap on the lens cap, pass the other end of the strap through the hole under the projector, next to the lens.

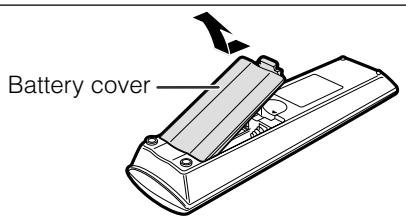
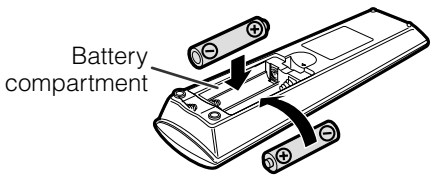
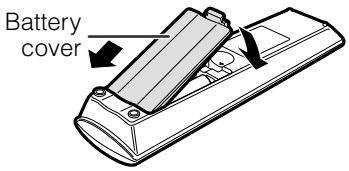


Part Names

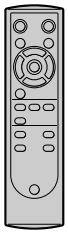
Remote Control



Inserting the batteries

1 Pull down the tab on the battery cover and remove the cover towards the direction of the arrow.	2 Insert two AA size batteries, making sure the polarities match the + and − marks inside the battery compartment.	3 Insert the lower tab of the battery cover into the opening, and press the cover until it clicks in place.
		

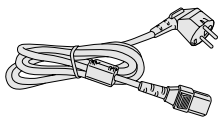
Supplied Accessories



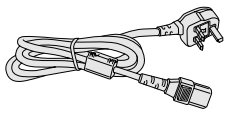
Remote control

Two AA size batteries

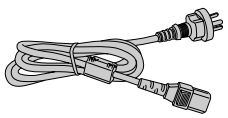
Power cord



(For Europe except U.K.)



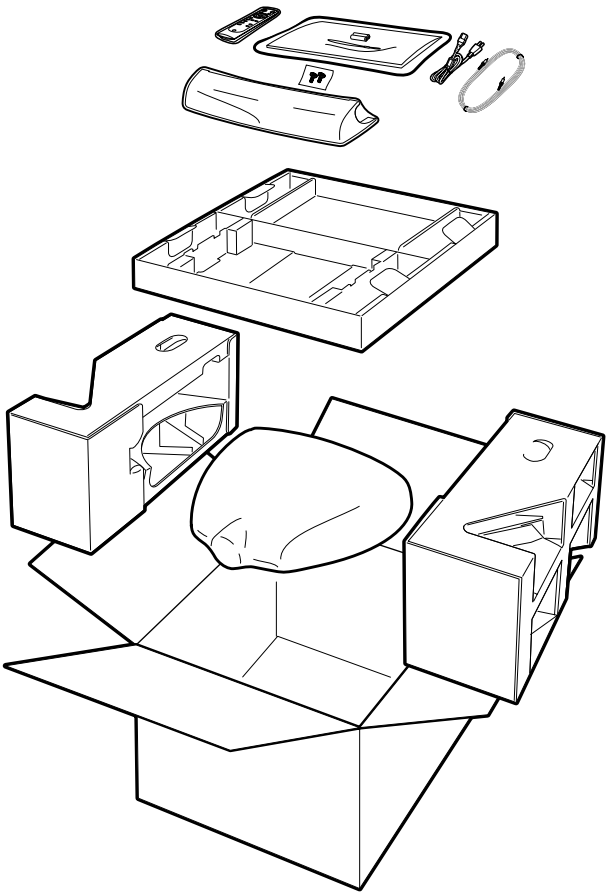
(For U.K., Hong Kong and Singapore)

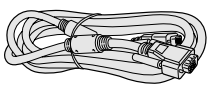


(For Australia and New Zealand)

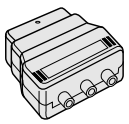
NOTE

- Use the power cord that corresponds to the wall outlet in your country.

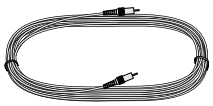




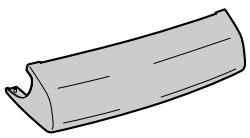
Computer-RGB cable



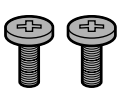
21 pin RCA conversion adaptor



Video cable

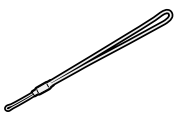


Terminal cover



Screws for terminal cover

Lens cap



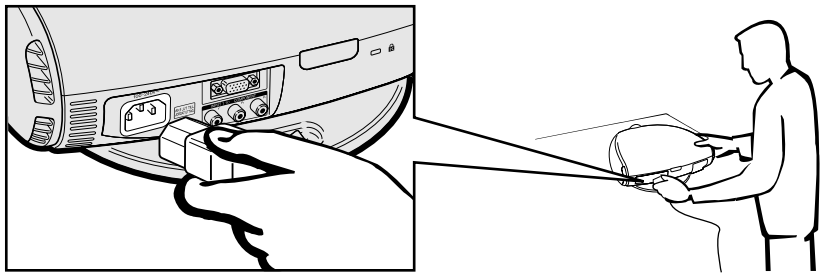
Lens cap strap

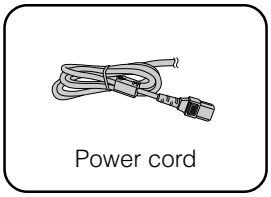
Projector Operation manual

Power Supply

Connecting the Power Cord

Plug the supplied power cord into the AC socket on the back of the projector.





CAUTION

- Make sure the power cord is firmly connected into the AC socket.

NOTE

- The projector will enter the standby mode as you re-plug it into the AC socket, when unplugging the power cord after turning the power off by pressing the **POWER** button. However, if the projector was turned off by disconnecting the power cord or by a power failure, the projector will automatically turn on when plugging the power cord again.

Connecting to Video Equipment

You can connect your projector to a VCR, laser disc player, DVD player, DTV* decoder and other video equipment.

* DTV is the umbrella term used to describe the new digital television system in the United States.

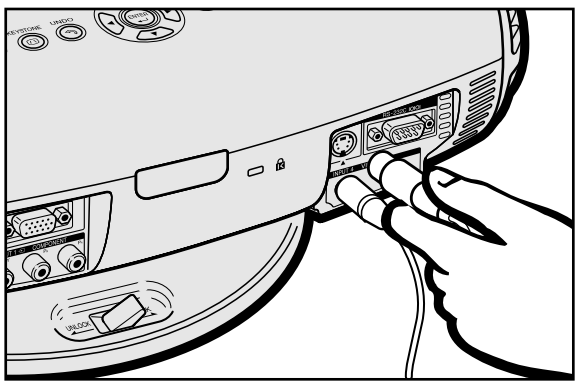
CAUTION

- Make sure to turn both the projector and the video equipment off, before connecting.

NOTE

- As this projector is not equipped with audio input terminals, commercially available audio equipment or your own equipment (such as speakers or amplifiers) should be used.

Connecting a video source (VCR, laser disc player, DVD player or DTV decoder) using the INPUT 3 S-VIDEO and INPUT 4 VIDEO terminals



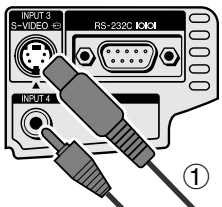
① Connect one end of the S-video cable (commercially available) to the **INPUT 3 S-VIDEO** terminal, or one end of the video cable to the **INPUT 4 VIDEO** terminal on the projector.
② Connect the other end of the S-video cable or the video cable to the S-video output or Video output terminal of the video source.

The S-video input terminal uses a video signal system where the picture is separated into a colour and luminance signal to realise a higher-quality image.

NOTE

- For higher quality video, you may use the S-video input terminal on the projector. An S-video cable is commercially available.
- If your video equipment does not have an S-video output terminal, use the composite video output terminal.

Projector

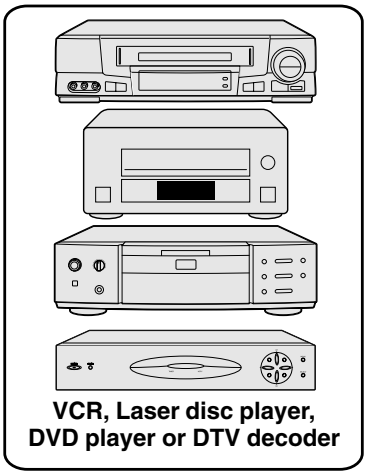


① S-video cable (commercially available)

② To S-video output terminal

① Video cable

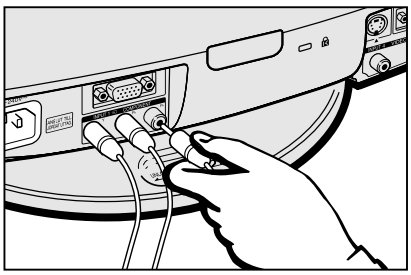
② To video output terminal



VCR, Laser disc player, DVD player or DTV decoder

Connecting to a DVD Player and DTV Decoder

Connecting to a DVD player and DTV decoder with Component output (for INPUT 1)



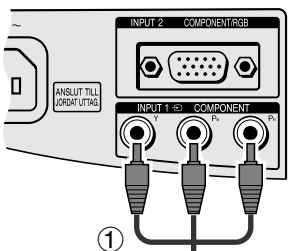
① Connect each RCA connector of a component cable to the corresponding RCA INPUT 1 terminals on the projector.

② Connect the other end of the cable to the corresponding terminals on a DVD player or DTV decoder.

⚠ CAUTION

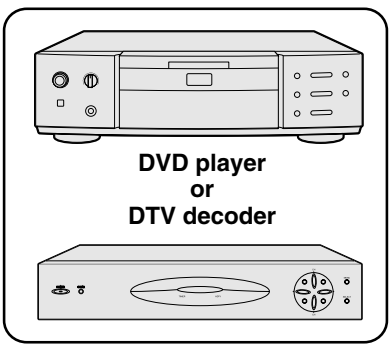
- Make sure to turn both the projector and the video equipment off, before connecting.

Projector



① Component cable (commercially available)

② To component output terminals



DVD player or DTV decoder

Connecting to a DVD player and DTV decoder with component output (for INPUT 2)

① Connect the 3 RCA to 15-pin D-Sub cable to INPUT 2 COMPONENT/RGB port on the projector.

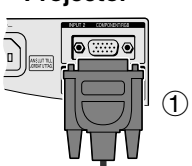
② Use the above cables to connect the DTV decoder or DVD player.

When connecting this projector to analog RGB output of the DTV decoder, select “Component” for “Signal Type” on the OSD menu or press **RGB/COMP.** on the remote control. (See page 36.)

⚠ CAUTION

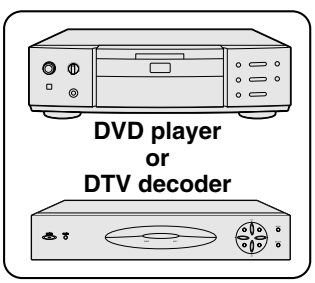
- Make sure to turn both the projector and the video equipment off, before connecting.

Projector



① 3 RCA to 15-pin D-sub cable (sold separately AN-C3CP)

②



DVD player or DTV decoder

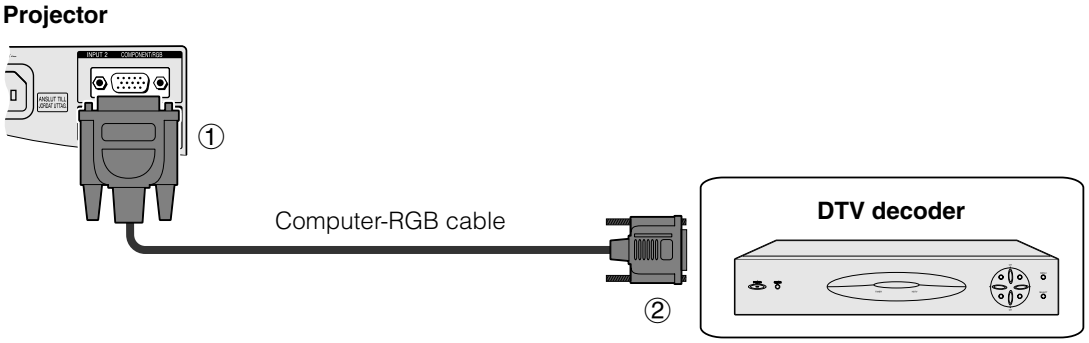
Connecting to a DTV decoder with analog RGB output

① Connect the computer-RGB cable to the INPUT 2 COMPONENT/RGB port.
② Connect the other end to the corresponding terminal on a DTV decoder.

When connecting this projector to analog RGB output of the DTV decoder, select “Component” for “Signal Type” on the OSD menu or press **RGB/COMP.** on the remote control. (See page 36.)

CAUTION

- Make sure to turn both the projector and the video equipment off, before connecting.



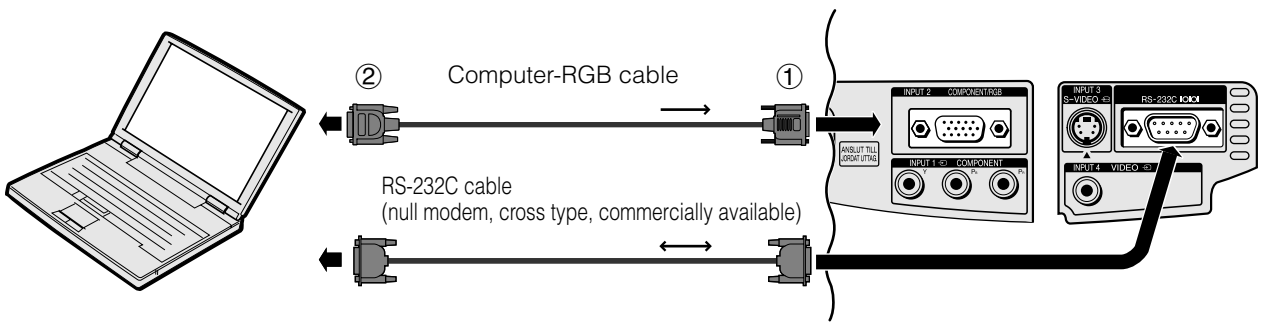
Connecting to a Computer

When the RS-232C port on the projector is connected to a computer with an RS-232C cable (null modem, cross type, commercially available), the computer can be used to control the projector and check the status of the projector. See pages 52 and 53 for details.

Connecting a computer with analog RGB output

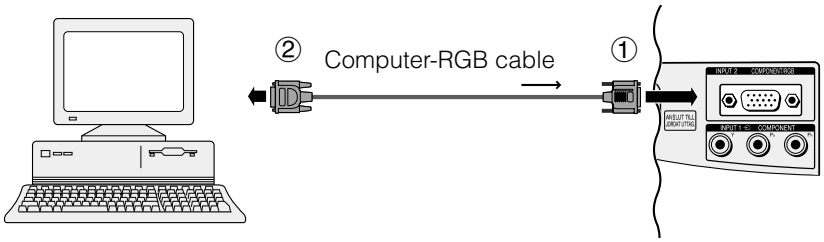
① Connect the computer-RGB cable end to the INPUT 2 COMPONENT/RGB port on the projector.
② Connect the other end to the computer.

When connecting this projector to a DVD player or DTV decoder, select “RGB” for “Signal Type” on the OSD menu or press **RGB/COMP.** on the remote control. (See page 36.)



Connecting a computer with RGB output

① Connect one of the computer-RGB cable to the INPUT 2 COMPONENT/RGB port on the projector.
② Connect the other end to the Corresponding terminal on a computer.
• Make sure to turn both the projector and the video equipment off, before connecting.



Connect an RS-232C cable (null modem, cross type, commercially available) to the serial port on the computer.

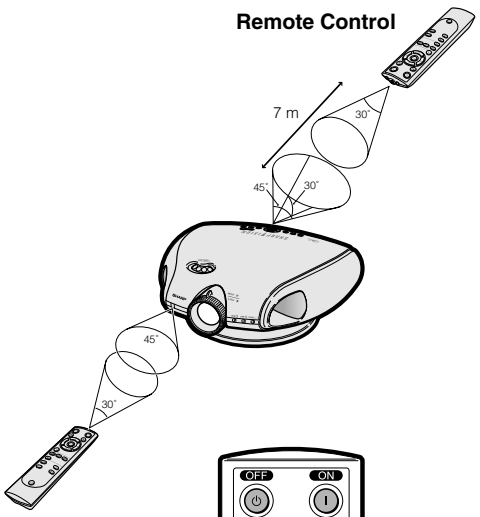
CAUTION

• Do not connect or disconnect an RS-232C cable to or from the computer while it is on. This may damage your computer.

NOTE

• Refer to "Computer Compatibility Chart" on page 54 for a list of computer signals compatible with the projector. Use with computer signals other than those listed may cause some of the functions not to work.
• The RS-232C function may not operate if your computer port is not correctly set up. Please refer to the operation manual of the computer for details.
• The arrows (→, ↔) in the configuration above indicate the direction of the signals.
• A Macintosh adaptor may be required for use with some Macintosh computers. Contact your nearest Sharp Authorised Projector Dealer or Service Centre.

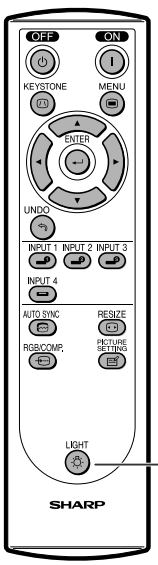
Operating the Remote Control



The remote control can be used to control the projector within the range shown on the left.

NOTE

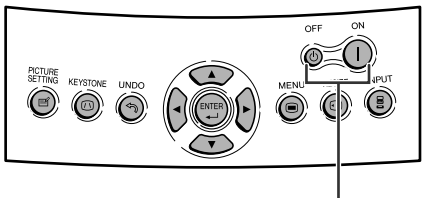
• The signal from the remote control can be reflected off a screen for easy operation. However, the effective distance of the signal may differ due to the screen material.



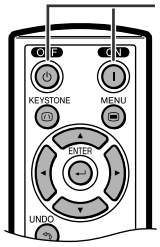
Using the remote control in a dark room

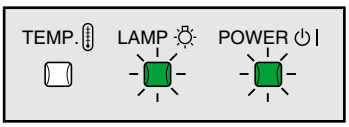
The backlights of the operation buttons can be turned on for five seconds and off by pressing **LIGHT**. If you want to turn off the backlights while they are on, press **LIGHT** again.

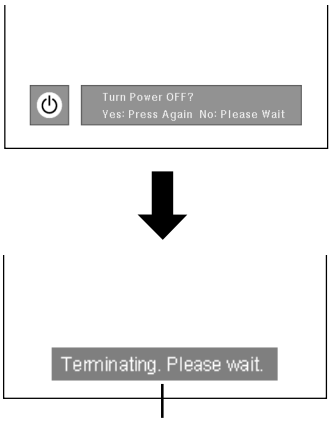
Power ON/OFF



POWER (ON/OFF) buttons







A dimly lit screen is displayed for a short time (about 20 seconds) to reduce lamp damage.

Press **POWER ON**.

- The blinking green LAMP REPLACEMENT indicator shows that the lamp is warming up. Wait until the indicator stops blinking before operating the projector.
- If the power is turned off and then immediately turned on again, it may take a short while before the lamp turns on.

NOTE

- After the projector is unpacked and turned on for the first time, a slight odor may be emitted from the exhaust ventilative hole. This odor will soon disappear with use.

When the power is on, the LAMP REPLACEMENT indicator illuminates, indicating the status of the lamp.
Green: Lamp is ready.
Green blinking: Warming up. / Cooling down.
Red: Change the lamp.

Press **POWER OFF**.

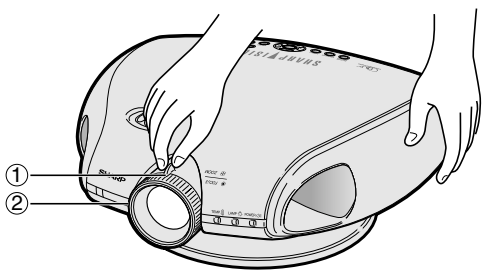
- Press **POWER OFF** again while the confirmation message is displayed. Then, message “Terminating. Please wait.” will appear.

NOTE

- If you accidentally pressed **POWER OFF** and do not want to turn off the power, wait until the confirmation message disappears.
- When **POWER OFF** is pressed twice, the POWER indicator will illuminate in red and the cooling fan will run for about 90 seconds. The projector will then enter standby mode.
- Wait until the cooling fan stops running before disconnecting the power cord.
- The power can be turned on again by pressing **POWER ON**. When the power is turned on, the POWER indicator and the LAMP REPLACEMENT indicators illuminate in green.

Zooming and Focusing

The picture can be zoomed in or out, and focused by the Zoom knob and the Focus ring.

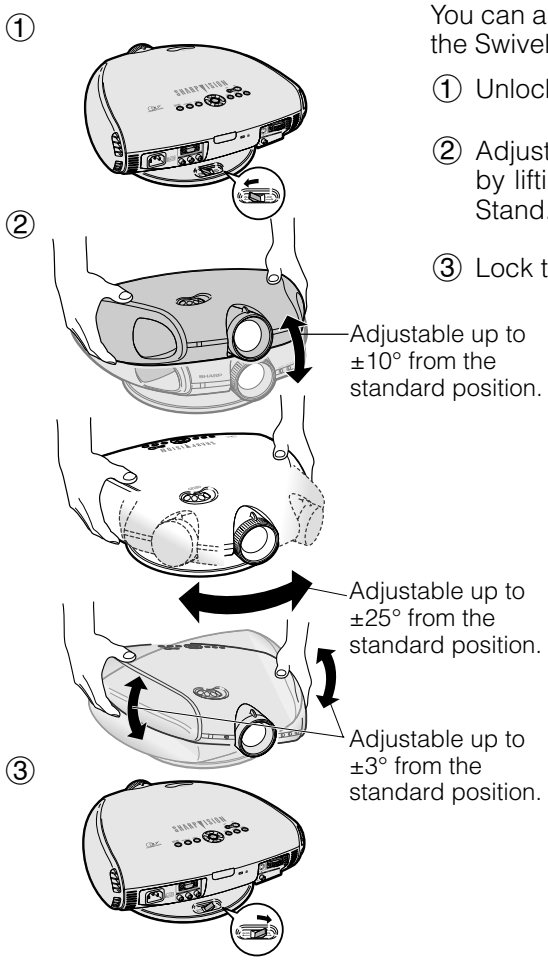


① Slide the Zoom knob. The image can be adjusted to the desired size within the zoom range.

② Rotate the Focus ring until the image on the screen becomes clear.

Setting Up the Screen

Using the Swivel Stand


①
②
Adjustable up to ±10° from the standard position.
Adjustable up to ±25° from the standard position.
Adjustable up to ±3° from the standard position.
③

You can adjust the angle and direction of the projected image by using the Swivel Stand.

① Unlock the lever on the Swivel Stand.

② Adjust the angle and direction of the projected image as you want by lifting up the projector and rotating the projector on the Swivel Stand.

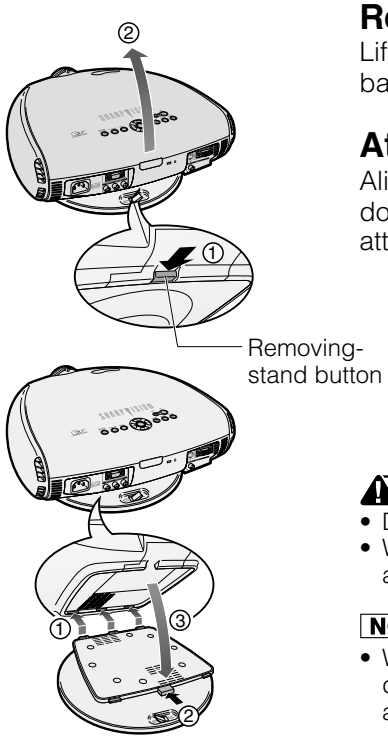
③ Lock the lever on the Swivel Stand.

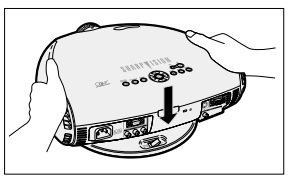
Removing the Swivel Stand

Lift the projector (②) with pressing the removing-stand button on the back of the projector (①).

Attaching the Swivel Stand

Align the tabs on the front bottom of the projector (①). While holding down the button (②), place the projector onto the Swivel Stand (③) to attach.





Press the projector down firmly to attach it to the Swivel Stand to make sure it is securely attached to the Swivel Stand.

CAUTION

- Do not hold the lens when lifting, lowering or rotating the projector.
- When lowering the projector, be careful not to get your fingers caught in the area between the Swivel Stand and the projector.

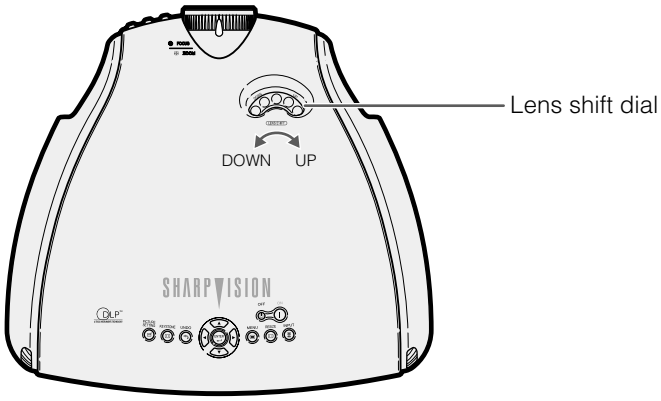
NOTE

- When the height or direction of the projector is adjusted, the image may become distorted (keystoned), depending on the relative positions of the projector and the screen. See page 19 for details on the keystone correction.

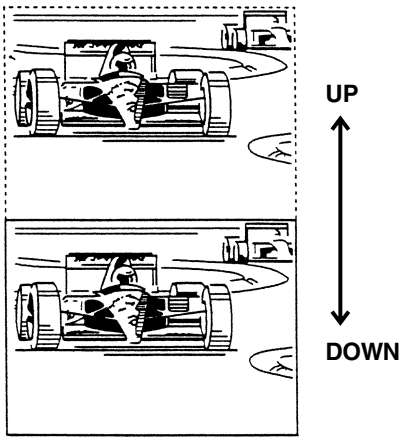
Using the Lens Shift

The picture can be adjusted within the shift range of the lens by rotating the lens shift dial on the top of the projector using your finger.

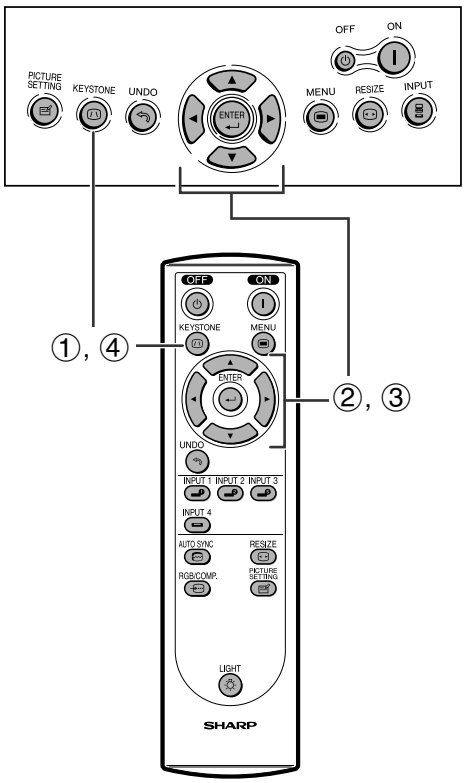
Projector



Projected Image



Keystone Correction



This function can be used to adjust the Keystone settings.

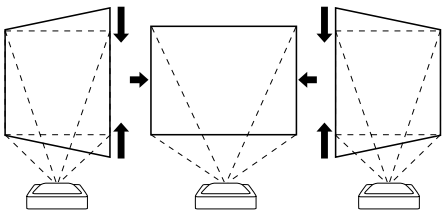
NOTE

- For details about using the menu screen, see page 26.

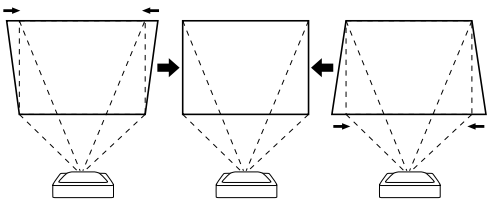
Description of 2D Keystone Correction

Selected item	Description
H Keystone	Horizontally adjusts the keystone settings.
V Keystone	Vertically adjusts the keystone settings.
Reset	V and H Keystone adjustments are returned to the factory preset settings.

Horizontal Keystone Correction



Vertical Keystone Correction



① Press **KEYSTONE** on the projector or on the remote control.

② Press ▲/▼ to select “H Keystone” or “V Keystone”.

③ Press ◀/▶ to move the ▮ mark on the selected adjustment item to the desired setting.

④ To return to the normal screen, press **KEYSTONE** again.

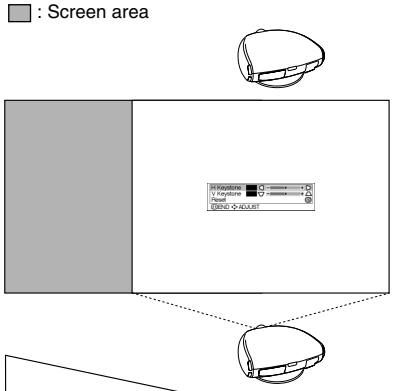
NOTE

- Straight lines and the edges of the displayed image may appear jagged, when adjusting the Keystone setting.
- When adjusting “H Keystone” and “V Keystone” at the same time, the values of adjustable angles for each setting become smaller.
- The “Digital Shift” and “Subtitle” cannot be adjusted when Keystone correction is applied.

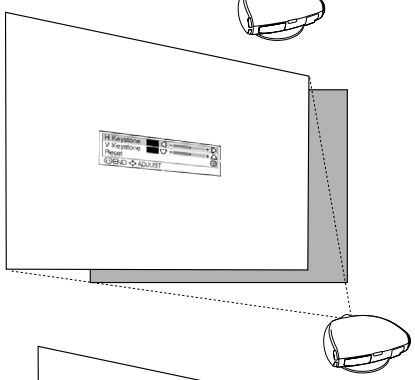
Placement of the Projected Image Using the Keystone Correction

: Screen area

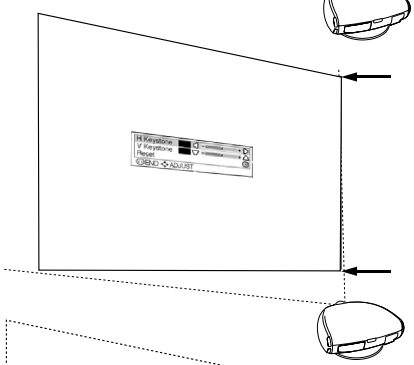
Place the projector at a distance from the screen that allows images to be projected onto the screen by referring to “Adjusting the Projection Distance” on pages 21 and 22.



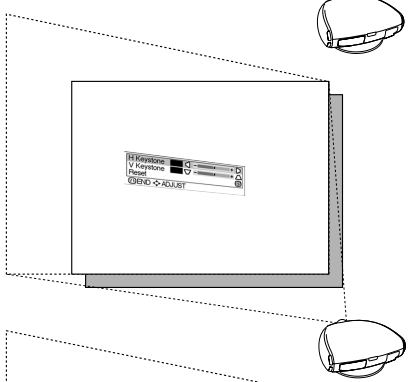
① Project the test pattern of the Keystone correction function onto the screen. Rotate the Focus ring until the image on the screen becomes clear. (See page 16.)



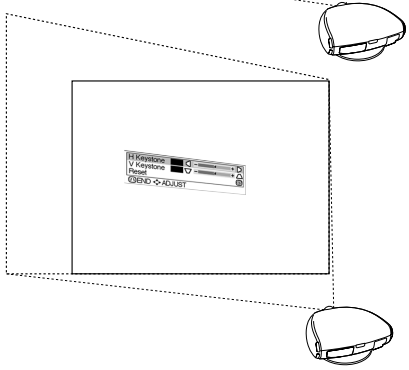
② Change the projection angle using the Swivel Stand to properly project images onto the screen. (See page 17).



③ Align the edge of the screen closest to the projector with the test pattern by adjusting the zoom and the Swivel Stand. (See pages 16 and 17.)



④ Adjust the Keystone function so that the size of the projected image matches the screen size. (See page 19.)



⑤ Align the image on the screen by adjusting the zoom function and the Swivel Stand.

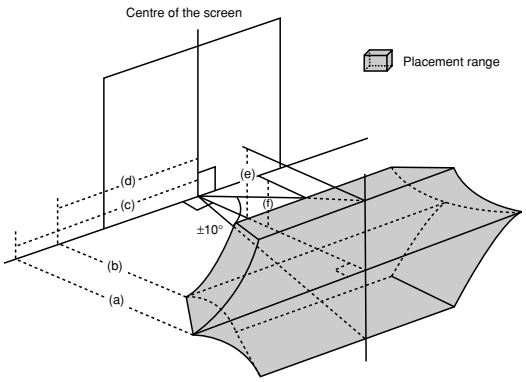
⑥ Adjust the focus so that the projected image is in focus at the centre of the screen. (See page 16.)

NOTE

- The aspect ratio of the projected image shifts slightly when the lens shift is at a position other than the top position.
- The aspect ratio of the projected image also shifts slightly when the “H Keystone” and “V Keystone” functions are adjusted simultaneously.

Adjusting the Projection Distance

- Refer to pages 19 and 20 about the function of Keystone correction and placement of projector using the correction.
- Decide the placement of the projector referring to the figures on the table and the diagram below according to the size of your screen and the input signal.

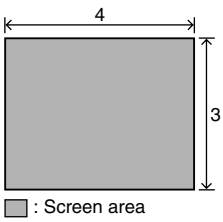


(a) Maximum projection distance
(b) Minimum projection distance
(c) Horizontal placement range when projection distance is maximum.
(d) Horizontal placement range when projection distance is minimum.
(e) Vertical placement range when projection distance is maximum.
(f) Vertical placement range when projection distance is minimum.

NOTE

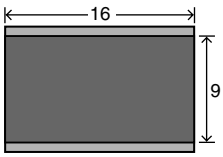
- The aspect ratio of the projected image shifts slightly when the lens shift is at a position other than the top position.
- The aspect ratio of the projected image also shifts slightly when the “H Keystone” and “V Keystone” functions are adjusted simultaneously.
- Keystone correction cannot be applied to On Screen Display.
- When Keystone correction is applied, the resolution of image can be deteriorated to some extent.
- There are errors of ±3% in the formulas below.

When using a normal screen (4:3)



Screen size (4:3)(*x*)	Projection distance and Keystone correction										
	Maximum projection distance					Minimum projection distance					
Diag.	Projection distance (a)	Horizontal Placement range (c)			Vertical placement range (e)	Projection distance (b)	Horizontal Placement range (d)			Vertical placement range (f)	
		Composite, S-video 480I/P, 1080I	720P	RGB			Composite, S-video 480I/P, 1080I	720P	RGB		
508cm (200")	–	–	–	–	–	6.2 m (20' 4")	1.5 m (4'11")	1.1 m (3' 7")	0.8 m (2' 7")	1.4 m (4' 7")	
381cm (150")	5.6 m (18' 5")	1.7 m (5' 7")	1.2 m (3'11")	0.9 m (2'11")	1.2 m (3'11")	4.6 m (15' 3")	1.1 m (3' 7")	0.8m (2' 7")	0.6 m (1'12")	1.0 m (3' 3")	
254cm (100")	3.7 m (12' 3")	1.1 m (3' 7")	0.8 m (2' 7")	0.6 m (1'12")	0.8 m (2' 7")	3.1 m (10' 2")	0.7 m (2' 4")	0.5m (1' 8")	0.4 m (1' 4")	0.7 m (2' 4")	
213cm (84")	3.1 m (10' 2")	0.9 m (2'11")	0.6 m (1'12")	0.5 m (1' 8")	0.7 m (2' 4")	2.6 m (8' 6")	0.6 m (1'12")	0.4 m (1' 4")	0.3 m (12")	0.5 m (1' 8")	
183cm (72")	2.7 m (8' 9")	0.8 m (2' 7")	0.5 m (1' 8")	0.4 m (1' 4")	0.6 m (1'12")	2.2 m (7' 3")	0.5 m (1' 8")	0.3m (12")	0.3 m (12")	0.5 m (1' 8")	
152cm (60")	2.2 m (7' 3")	0.6 m (1'12")	0.4 m (1' 4")	0.3 m (12")	0.5 m (1' 8")	1.8 m (6")	0.4 m (1' 4")	0.3 m (12")	0.2 m (8")	0.4 m (1' 4")	
102cm (40")	1.5 m (4'11")	0.4 m (1' 4")	0.3 m (12")	0.2 m (8")	0.3 m (12")	1.2 m (3'11")	0.3 m (12")	0.2 m (8")	0.1 m (4")	0.2 m (8")	

When using a wide screen (16:9)



Screen size (16:9)(*x*)	Projection distance and Keystone correction										
	Maximum projection distance					Minimum projection distance					
Diag.	Projection distance (a)	Horizontal Placement range (c)			Vertical placement range (e)	Projection distance (b)	Horizontal Placement range (d)			Vertical placement range (f)	
		Composite, S-video 480I/P, 1080I	720P	RGB			Composite, S-video 480I/P, 1080I	720P	RGB		
508cm (200")	8.2 m (26'11")	2.5 m (8' 2")	1.8 m (5'11")	1.4 m (4' 7")	1.8 m (5'11")	6.8 m (22' 2")	1.6 m (5' 3")	1.2 m (3'11")	0.9 m (2'11")	1.5 m (4'11")	
381cm (150")	6.1 m (20' 1")	1.8 m (5'11")	1.3 m (4' 3")	1.0 m (3' 3")	1.4 m (4' 7")	5.1 m (16' 7")	1.2 m (3'11")	0.9 m (2'11")	0.7 m (2' 4")	1.1 m (3' 7")	
338cm (133")	5.4 m (17'10")	1.6 m (5' 3")	1.1 m (3' 7")	0.9 m (2'11")	1.2 m (3'11")	4.5 m (14' 9")	1.1 m (3' 7")	0.8 m (2' 7")	0.6 m (1'12")	1.0 m (3' 3")	
269cm (106")	4.3 m (14' 2")	1.3 m (4' 3")	0.9 m (2'11")	0.7 m (2' 4")	0.9 m (2'11")	3.6 m (11' 8")	0.8 m (2' 7")	0.6 m (1'12")	0.5 m (1' 8")	0.8 m (2' 7")	
254cm (100")	4.1 m (13' 4")	1.2 m (3'11")	0.9 m (2'11")	0.7 m (2' 4")	0.9 m (2'11")	3.4 m (11')	0.8 m (2' 7")	0.6 m (1'12")	0.4 m (1' 4")	0.7 m (2' 4")	
234cm (92")	3.7 m (12' 3")	1.1 m (3' 7")	0.8 m (2' 7")	0.6 m (1'12")	0.8 m (2' 7")	3.1 m (10' 2")	0.7 m (2' 4")	0.5 m (1' 8")	0.4 m (1' 4")	0.7 m (2' 4")	
213cm (84")	3.4 m (11' 2")	1.0 m (3' 3")	0.7 m (2' 4")	0.5 m (1' 8")	0.7 m (2' 4")	2.8 m (9' 3")	0.6 m (1'12")	0.5 m (1' 8")	0.4 m (1' 4")	0.6 m (1'12")	
183cm (72")	2.9 m (9' 7")	0.8 m (2' 7")	0.6 m (1'12")	0.4 m (1' 4")	0.6 m (1'12")	2.4 m (7'11")	0.5 m (1' 8")	0.4 m (1' 4")	0.3 m (12")	0.5 m (1' 8")	
152cm (60")	2.4 m (7'11")	0.7 m (2' 4")	0.5 m (1' 8")	0.4 m (1' 4")	0.5 m (1' 8")	2.0 m (6' 7")	0.4 m (1' 4")	0.3 m (12")	0.2 m (8")	0.4 m (1' 4")	
102cm (40")	1.6 m (5' 3")	0.4 m (1' 4")	0.3 m (12")	0.2 m (8")	0.3 m (12")	1.3 m (4' 3")	0.3 m (12")	0.2 m (8")	0.1 m (4")	0.2 m (8")	

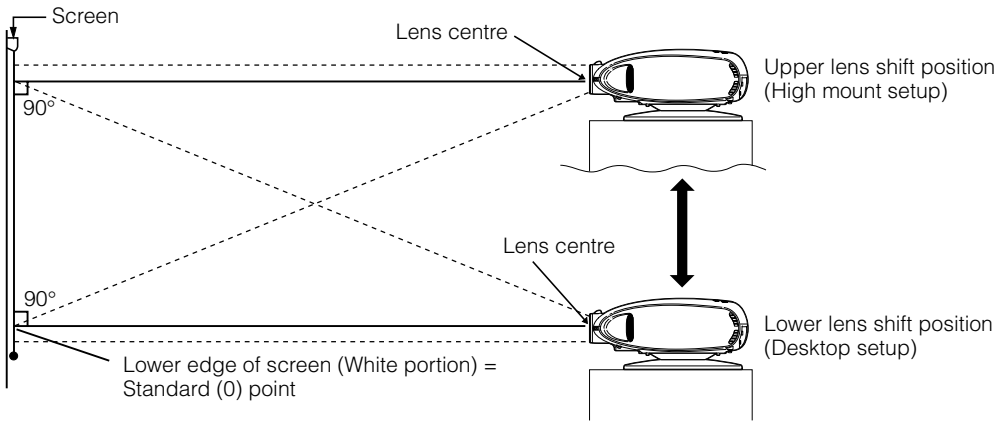
Upper and Lower Lens Shift Position

- This projector is equipped with a lens shift function that lets you adjust the projection height.
- Adjust it to match the setup configuration.
- The screen can be moved maximum the length of one screen vertically using the lens shift.

NOTE

- Optimal image quality is produced with the projector positioned perpendicular to the screen with all feet flat and level. Tilting or angling the projector will reduce the effectiveness of the lens shift function.

Screen size: 254 cm (100 inches)
Aspect ratio: 4:3



Upper and Lower Lens Shift Position (Ceiling Mount)

When the projector is in the inverted position, use the upper edge of the screen as the base line, and exchange the lower and upper lens shift values.

Screen size: 254 cm (100 inches)
Aspect ratio: 4:3

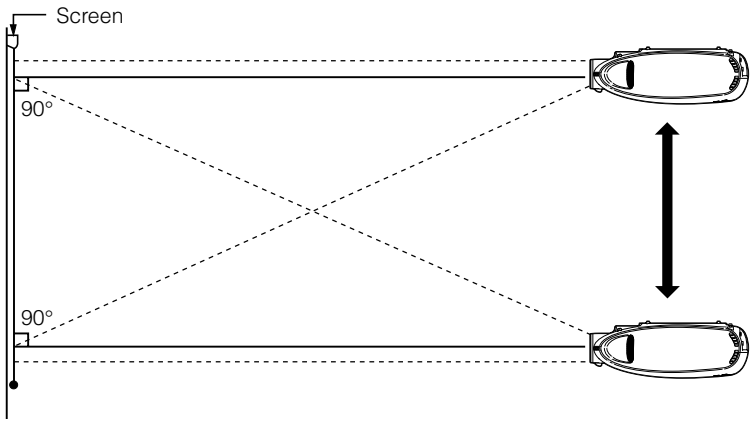
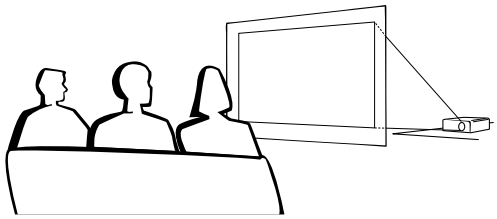


Image Projection

Rear Projection

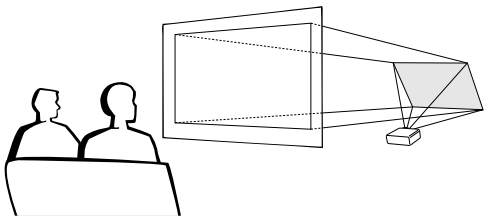


- Place a translucent screen between the projector and the audience.
- Use the projector's menu screen to reverse the projected image. (See page 42 for use of this function.)

NOTE

- Optimal image quality can be achieved when the projector is positioned perpendicular to the screen with all feet flat and leveled.

Projection Using a Mirror

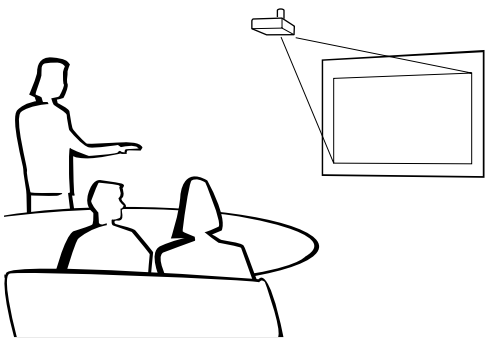


- When the distance between the projector and a screen is not sufficient for normal rear projection, you can use a mirror to reflect the image onto the screen.
- Place a mirror (normal flat type) in front of the lens.
- Project the normal image onto the mirror.
- The image reflected from the mirror is projected onto the translucent screen.

CAUTION

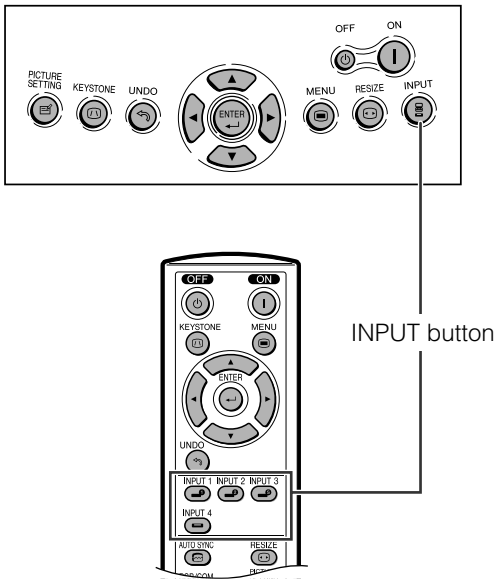
- When using a mirror, be sure to carefully position both the projector and the mirror so the light does not shine into the eyes of the audience.

Ceiling-mount Projection



- It is recommended that you use the optional Sharp ceiling-mount bracket for this installation.
- Before mounting the projector, remove the Swivel Stand. (See page 17 for removing and attaching the Swivel Stand.)
- Before mounting the projector, contact your nearest Sharp Authorised Projector Dealer or Service Centre to obtain the recommended ceiling-mount bracket (sold separately). (AN-TK202 ceiling-mount bracket, AN-TK201 extension tube, AN-60KT ceiling adaptors for AN-TK202 or AN-TK201)
- When the projector is in the inverted position, use the upper edge of the screen as the base line.
- Use the projector's menu screen to select the appropriate projection mode. (See page 42 for use of this function.)

Selecting the Input Signal Source

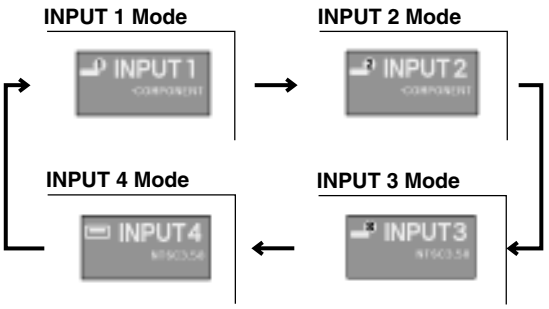


Press **INPUT** on the projector, **INPUT 1**, **INPUT 2**, **INPUT 3** or **INPUT 4** on the remote control to select the desired input mode.

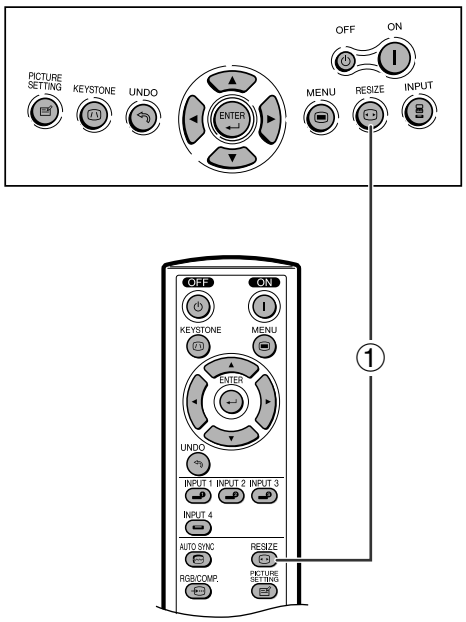
NOTE

- When no signal is received, “NO SIGNAL” will be displayed. When a signal that the projector is not preset to receive is received, “NOT REG.” will be displayed.

On-screen Display

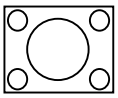
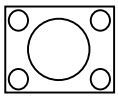
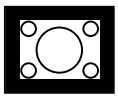
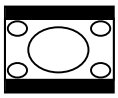
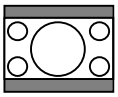
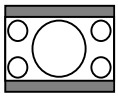
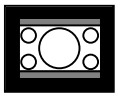
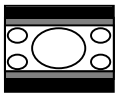
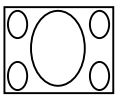
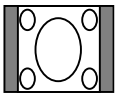
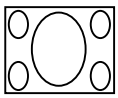
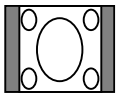
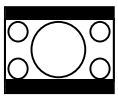
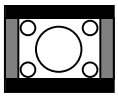
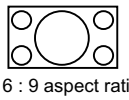
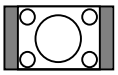
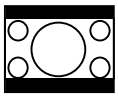
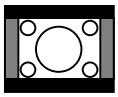


Adjusting the Picture Aspect Ratio



This function allows you to modify or customize the picture display mode to enhance the input image. Depending on the input signal, you can choose NORMAL, BORDER or STRETCH image.

① Press **RESIZE**. Each time **RESIZE** is pressed, the picture mode changes as shown on the next page.

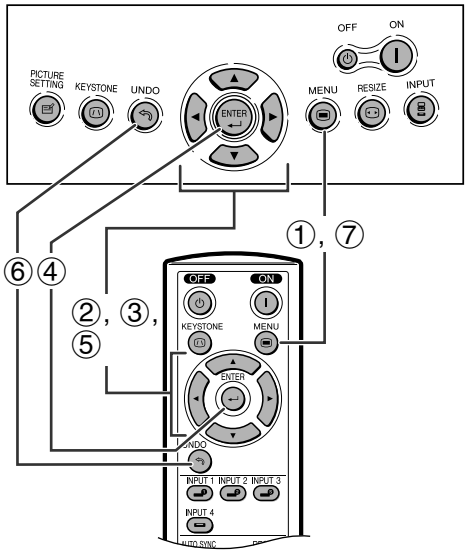
Input Signal			Output screen image		
DVD/ VIDEO	**COMPUTER**	**Image Type**	**NORMAL** Projects the image fully on a screen while maintaining the aspect ratio.	**BORDER** Projects the image on the screen whose surrounding areas are cut out to make a 4:3 screen while maintaining the aspect ratio.	**STRETCH** Projects the image on the screen whose upper and lower areas are cut out to make a 16:9 screen while the image is horizontally enlarged.
480I 480P 540P NTSC PAL SECAM	VGA (640×480) SVGA (800×600) XGA (1024×768)	 4:3 aspect ratio	* 	* 	
		 Letter Box	*  —	* 	
		 Squeezed 16:9 image  Squeezed 4:3 image	 	 	*  * 
720P 1080I	—	 16 : 9 aspect ratio 			*  * 

* Mode for projecting an image with the original aspect ratio without cutting any portions.

: Cutout area on which images cannot be projected.

: Area on which the image is not included in the original signals.

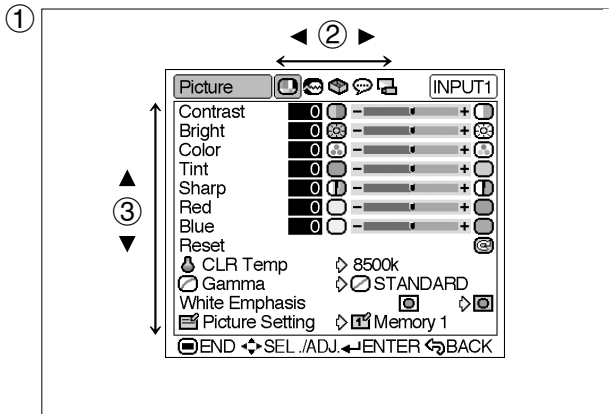
Basic Operations



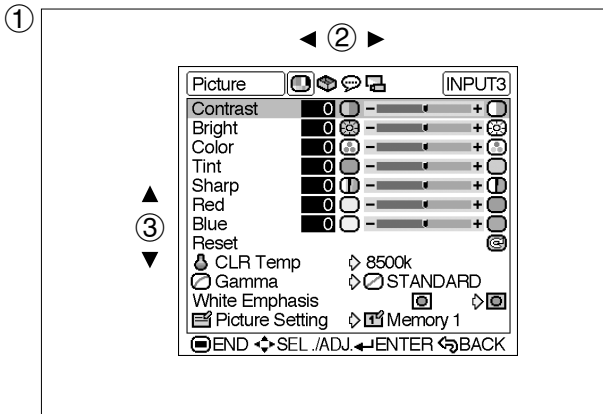
This projector has two sets of menu screens that allow you to adjust the image and various projector settings. These menu screens can be operated from the projector or the remote control with the following procedure.

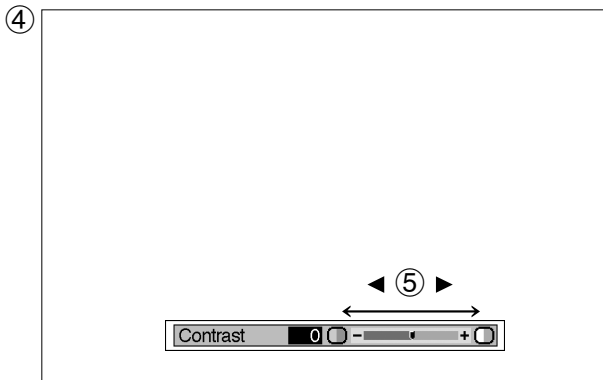
On-screen Display

INPUT 1 (COMPONENT) or 2 (COMPONENT or analog RGB) mode



INPUT 3 or 4 (VIDEO) mode





① Press **MENU**. The "Picture" menu screen for the selected INPUT mode appears.

② Press ◄/► to display the other menu screen, if you want. The icon for the selected menu screen will be highlighted.

③ Press ▲/▼ to select a specific adjustment item.

④ Press **ENTER** after selecting the item if you want to display a single adjustment item. Only the selected adjustment item will appear.

⑤ Press ◄/► to adjust the item.

⑥ Press **UNDO** to return to the previous screen.

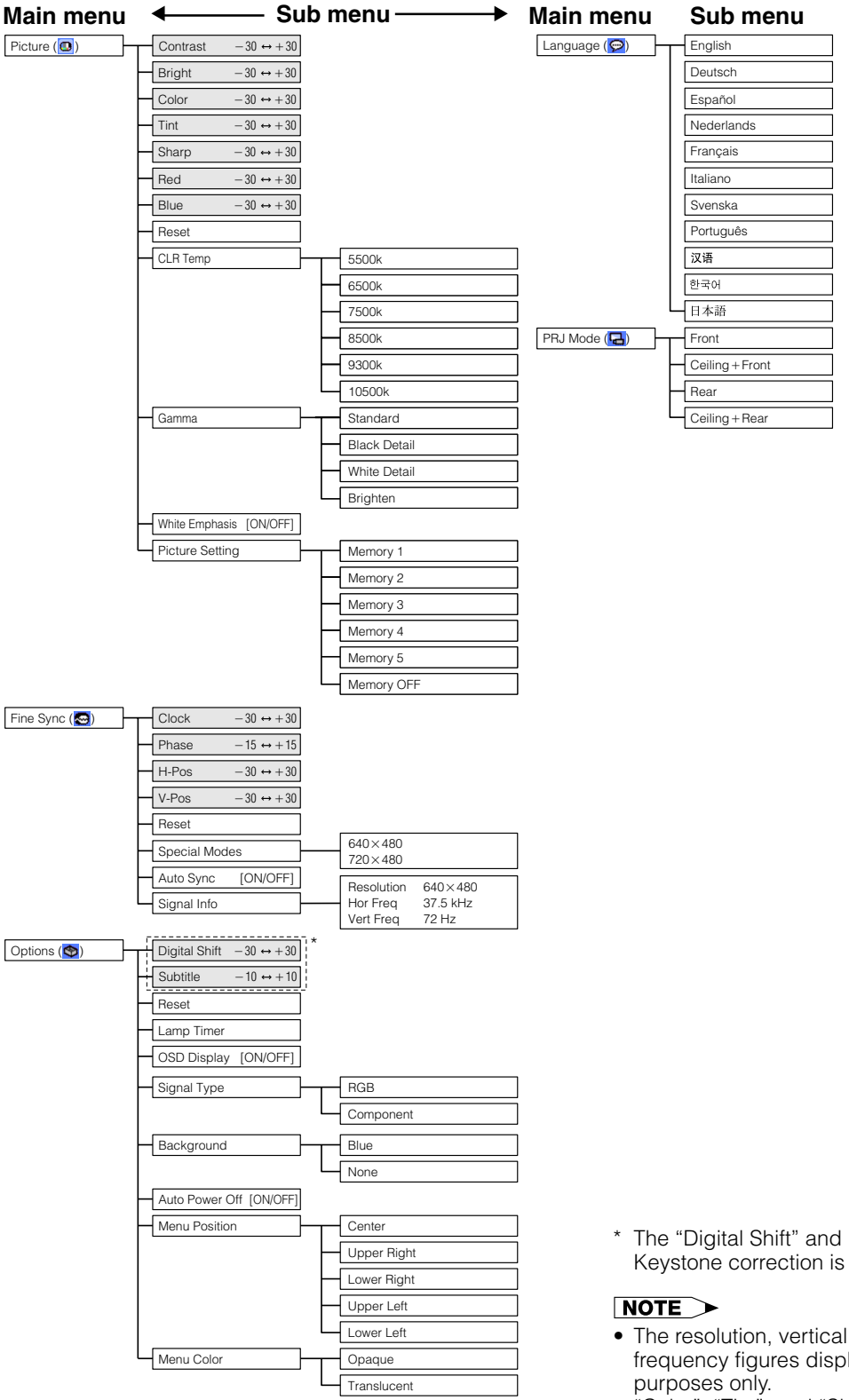
⑦ To exit the menu screen, press **MENU**.

NOTE

- For details on items on the menu screen, see the tree charts on pages 27 and 28.

Menu Bars

Items on the INPUT 1 or 2 Mode Menu Bar

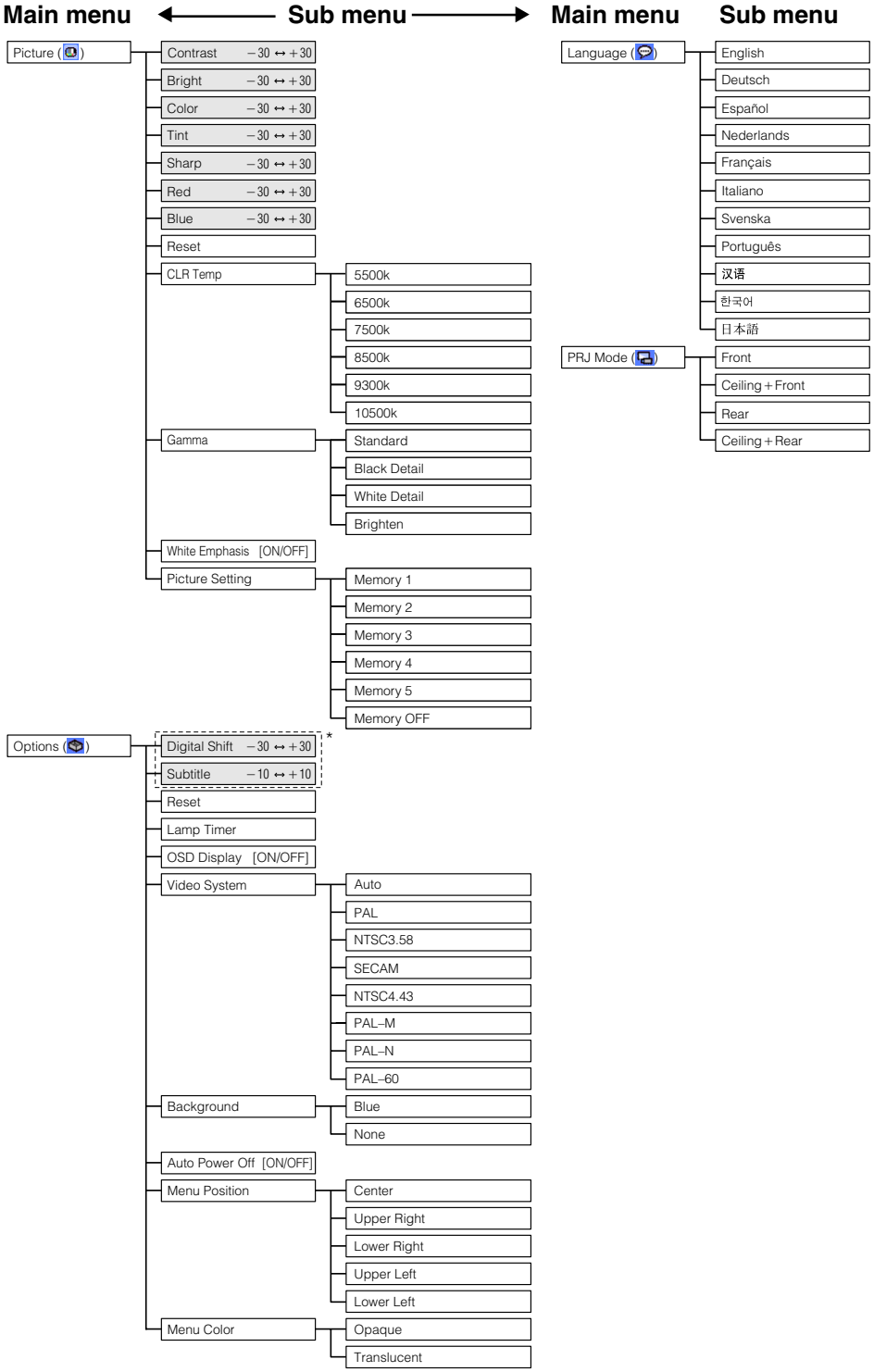


* The “Digital Shift” and “Subtitle” cannot be adjusted when Keystone correction is applied.

NOTE

- The resolution, vertical frequency and horizontal frequency figures displayed above are for example purposes only.
- “Color”, “Tint”, and “Sharp” do not appear when “RGB” is selected in INPUT 2 mode.
- Only the items highlighted in the tree charts above can be adjusted.
- To adjust the items under the sub menu, press ▶ after selecting the sub menu.
- “Signal Type” is not displayed when using INPUT 1.
- “Clock”, “Phase”, “H-Pos” and “V-Pos” cannot be used in the component mode.

Items on the INPUT 3 or 4 Mode Menu Bar

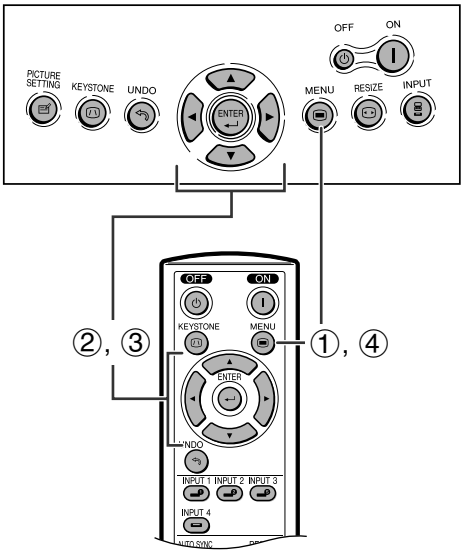


* The “Digital Shift” and “Subtitle” cannot be adjusted when Keystone correction is applied.

NOTE

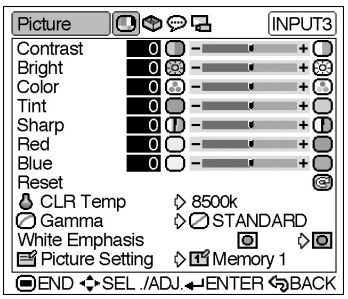
- Only the items highlighted in the tree charts above can be adjusted.
- To adjust the items under the sub menu, press ► after selecting the sub menu.
- “Tint” cannot be used with PAL, SECAM, PAL-M, PAL-N or PAL-60.

Adjusting the Picture

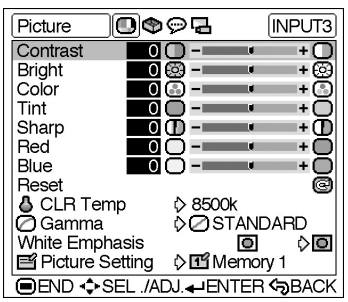


On-screen Display
e. g. (VIDEO input in INPUT 3 or 4 mode)

①



②



You can adjust the projector's picture to your preferences with the following picture settings. To save the settings, select a memory from 1 to 5 and OFF (see page 32) and then adjust the settings.

Description of Adjustment Items

Selected item	◄ button	► button
Contrast	For less contrast	For more contrast
Bright	For less brightness	For more brightness
Color	For less colour intensity	For more colour intensity
Tint	Skin tones become purplish	Skin tones become greenish
Sharp	For less sharpness	For more sharpness
Red	For weaker red	For stronger red
Blue	For weaker blue	For stronger blue
CLR Temp	For selecting a desired item from six colour temperature settings	
Gamma	For selecting a desired item from four gamma positions	
White Emphasis	For switching "on" or "off" the function that emphasizes bright portions of the image	
Picture Setting	For storing all items set in "Picture"	
Reset	All image adjustment items are returned to the factory preset settings.	

NOTE

- "Color", "Tint" and "Sharp" do not appear for RGB input in INPUT 2 mode.
- For details on "Gamma", see "Gamma Correction Function" on page 31.
- For details on "CLR Temp", see "Adjusting the Colour Temperature" on page 30.
- For details on "White Emphasis", see "Description of White Emphasis" on page 30.
- For details on "Picture Setting", see "Picture Setting Function" on page 32.

① Press **MENU**. The "Picture" menu screen appears.

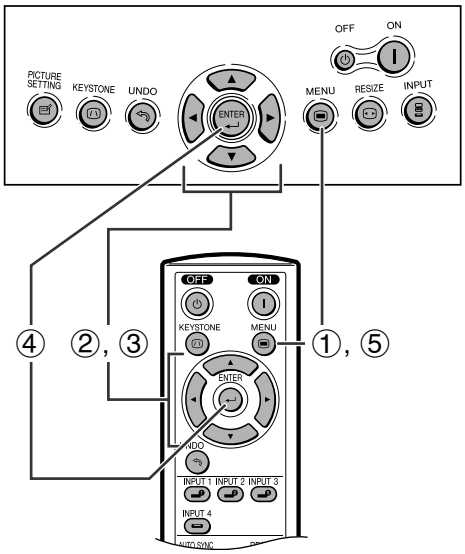
② Press ▲/▼ to select a specific adjustment item.

③ Press ◄/► to move the ▮ mark of the selected adjustment item to the desired setting.

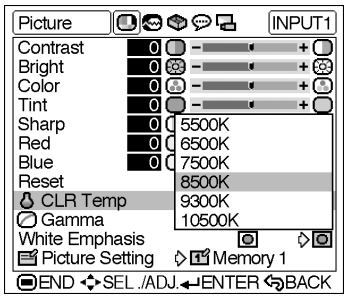
④ To exit the menu screen, press **MENU**.

NOTE

- To reset all adjustment items, select "Reset" on the "Picture" menu screen and press **ENTER**.
- "Tint" cannot be used with PAL, SECAM, PAL-M, PAL-N or PAL-60.



On-screen Display



Adjusting the Colour Temperature

This function allows for selecting the desired colour temperature from six settings. With the lower value selected, the projected image becomes warmer, reddish and incandescent-like while with the higher value, the image becomes cooler, bluish and fluorescent-like.

Description of Colour Temperature

① Press **MENU**. The "Picture" menu screen appears.

② Press ▲/▼ to select "CLR Temp", and then press ►.

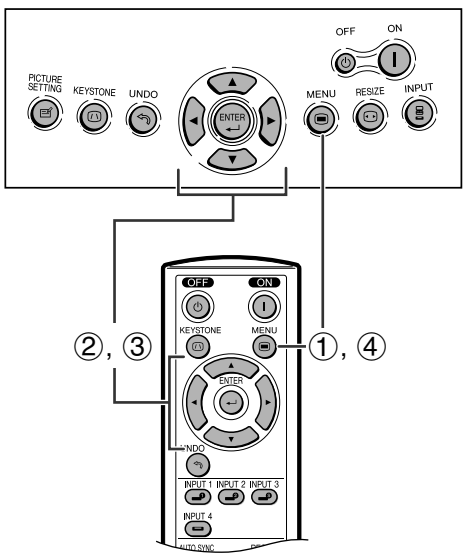
③ Press ▲/▼ to select the desired colour temperature setting.

④ Press **ENTER** to save the setting.

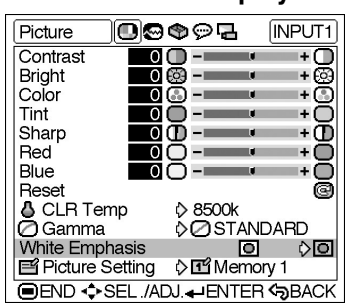
⑤ To exit the menu screen, press **MENU**.

NOTE

- Values on "CLR Temp" are only for general standard purposes. The less the value is set to, the warmer, reddish, incandescent-like the image becomes. The more the value is set to, the cooler, bluish, fluorescent-like the image becomes.



On-screen Display



Emphasising the Contrast

This function emphasizes the bright portions of images to obtain a higher contrast image.

Description of White Emphasis

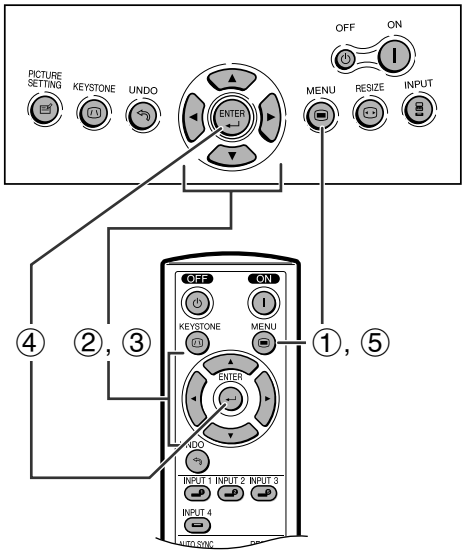
Selected item	Description
ON	For emphasizing the bright portions of images
OFF	For disabling "White Emphasis"

① Press **MENU**. The "Picture" menu screen appears.

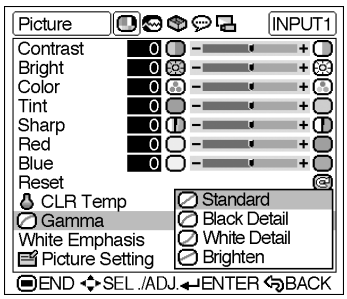
② Press ▲/▼ to select "White Emphasis".

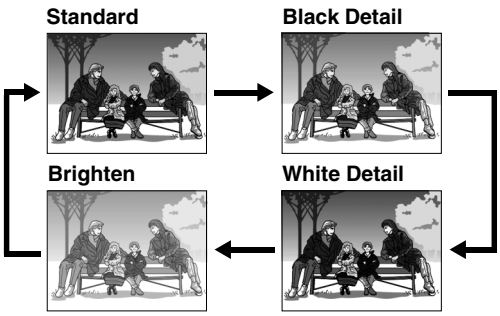
③ Press ◄/► to select the desired white emphasis setting.

④ To exit the menu screen, press **MENU**.



On-screen Display





Gamma Correction Function

Gamma is an image quality enhancement function. Four gamma settings are available to allow for differences in the brightness of the room.

Description of Gamma Modes

Selected Mode	Description
Standard	Standard picture without gamma correction
Black Detail	Gives greater depth to darker portions of images for a more exciting theatre experience.
White Detail	Emphasizes the gradation of the intermediate to high brightness portions of the image for more detailed expression.
Brighten	Brighten the darker portions of images for easier viewing in a dimly lit room.

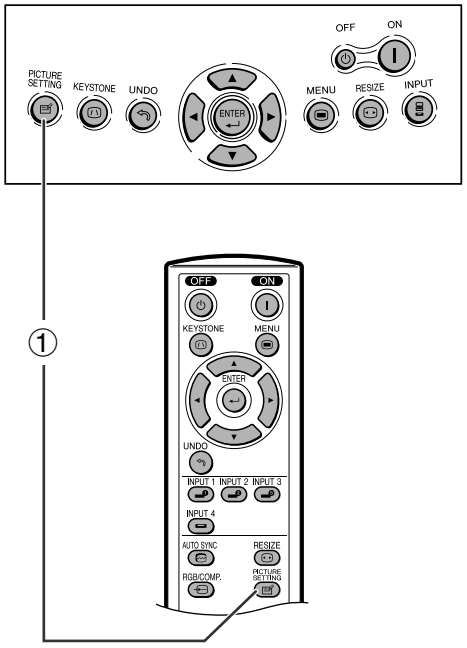
① Press **MENU**. The “Picture” menu screen appears.

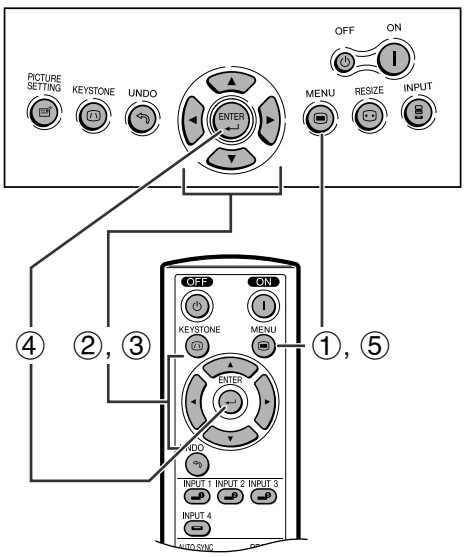
② Press ▲/▼ to select “Gamma”, and then press ►.

③ Press ▲/▼ to select the desired gamma mode.

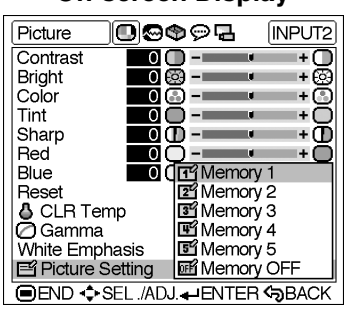
④ Press **ENTER** to save the setting.

⑤ To exit the menu screen, press **MENU**.





On-screen Display



Picture Setting Function

This function stores all items set in “Picture”. Five settings can be stored separately in “Memory 1” to “Memory 5”. Each stored setting is reassigned to each input mode (INPUT 1 to INPUT 4).
Even when the input mode or signal is changed, you can easily select optimal settings from the stored settings.

NOTE

- This function can be operated using the **PICTURE SETTING** button on the projector or on the remote control, as well as the OSD menu screen.

Description of Picture Setting

Selected item	Description
Memory 1-5	Settings of all items in “Picture” can be stored for the respective input modes. The stored settings can be selected in any input modes.
Memory OFF	Besides “Memory 1” to “Memory 5”, other settings can be stored for each input mode. “Memory OFF” can be selected for each input mode.

Selecting “Memory 1-5” or “Memory OFF” Using the PICTURE SETTING Button

① Press **PICTURE SETTING**. Each time **PICTURE SETTING** is pressed, the memory number changes as shown below.

Memory 1 → Memory 2 → Memory 3
Memory OFF ← Memory 5 ← Memory 4

Storing the Adjustment Values for each Memory Number

① Press **MENU**. The “Picture” menu screen appears.

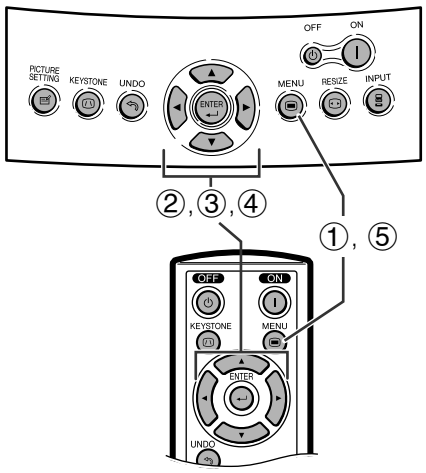
② Press ▲/▼ to select “Picture Setting”, and then press ►.

③ Press ▲/▼ to select the desired memory number for the picture settings.

④ Press **ENTER** to save the settings. Adjust the settings described on pages 29 to 31. The values that are adjusted are stored.

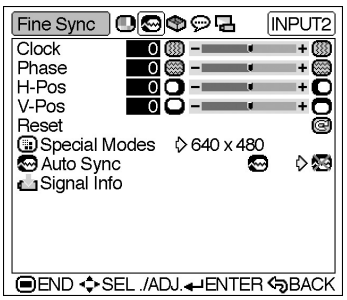
⑤ To exit the menu screen, press **MENU**.

Adjusting the Computer and DVD/DTV Images

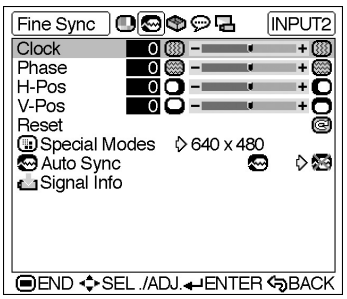


On-screen Display

②



③



When displaying computer patterns which are very detailed (tiling, vertical stripes, etc.), interference may occur between the DMD pixels, causing flickering, vertical stripes, or contrast irregularities in portions of the screen. Should this occur, adjust “Clock”, “Phase”, “H-Pos” and “V-Pos” for the optimum computer image.

Description of Adjustment Items

Selected item	Description
Clock	Adjusts vertical noise.
Phase	Adjusts horizontal noise (similar to tracking on your VCR).
H-Pos	Centres the on-screen image by moving it to the left or right.
V-Pos	Centres the on-screen image by moving it up or down.
Reset	All computer image adjustment items are returned to the factory preset settings.

NOTE

- “Clock”, “Phase”, “H-Pos” and “V-Pos” cannot be used in the component mode.
- Computer image adjustments can be made easily by pressing **AUTO SYNC** (🖵) on the remote control. See page 35 for details.

① Press **MENU**. The “Picture” menu screen appears.

② Press ◄/► to display the “Fine Sync” menu screen.

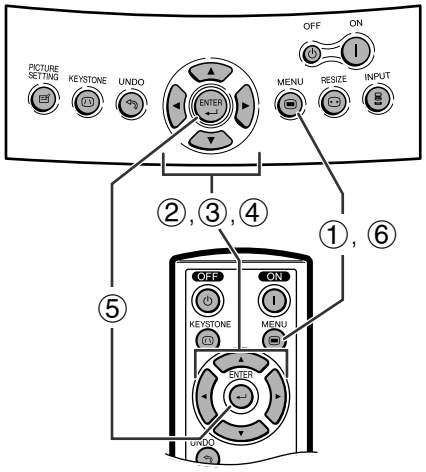
③ Press ▲/▼ to select a specific adjustment item.

④ Press ◄/► to move the ▮ mark of the selected adjustment item to the desired setting.

⑤ To exit the menu screen, press **MENU**.

NOTE

- To reset all adjustment items, select “Reset” on the “Fine Sync” menu screen and press **ENTER**.
- The adjustable area of each item may be changed according to the input signal.



Special Modes Adjustment

Ordinarily, the type of input signal is detected and the correct resolution mode is automatically selected. However, for some signals, the optimal resolution mode in "Special Modes" on the "Fine Sync" menu screen may need to be selected to match the computer display mode.

① Press **MENU**. The "Picture" menu screen appears.

② Press ◄/► to display the "Fine Sync" menu screen.

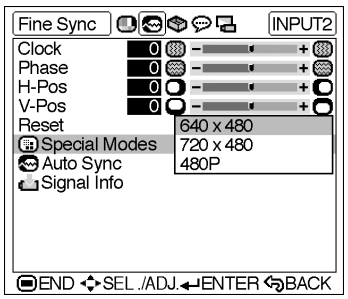
③ Press ▲/▼ to select "Special Modes", and then press ►.

④ Press ▲/▼ to select the optimal resolution.

⑤ Press **ENTER** to save the setting.

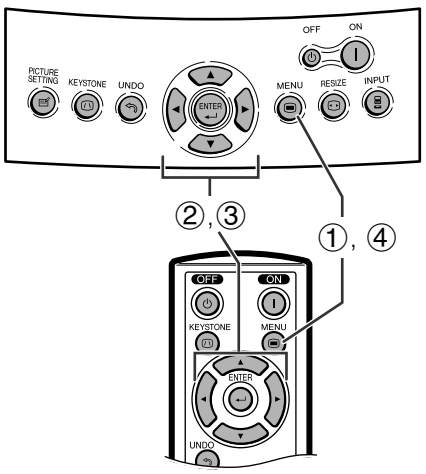
⑥ To exit the menu screen, press **MENU**.

On-screen Display



NOTE

- Avoid displaying computer patterns which repeat every other line (horizontal stripes). (Flickering may occur, making the image hard to see.)
- When inputting DTV 1080I signal, select the corresponding type of signal in step 4 above.
- When inputting 720P RGB signal, select the corresponding type of signal in step 4 above.



Checking the Input Signal

This function allows you to check the current input signal information.

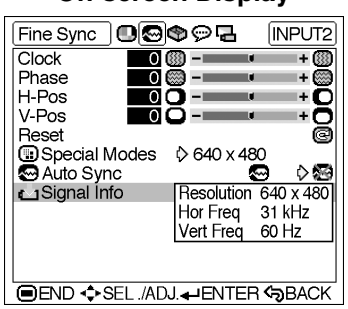
① Press **MENU**. The "Picture" menu screen appears.

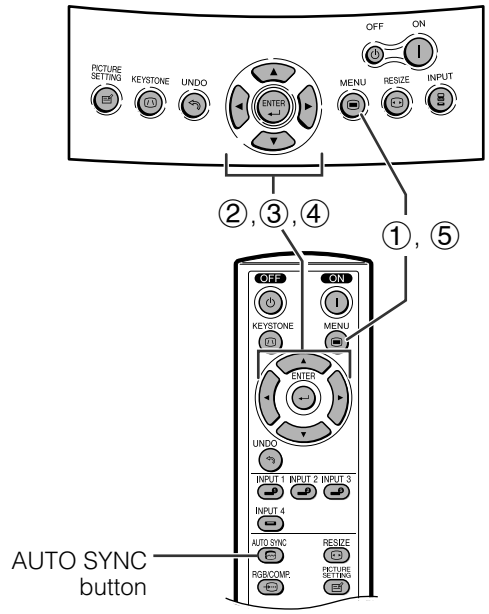
② Press ◄/► to display the "Fine Sync" menu screen.

③ Press ▲/▼ to select "Signal Info" to display the current input signal.

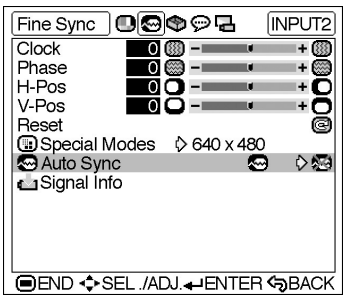
④ To exit the menu screen, press **MENU**.

On-screen Display





On-screen Display



Auto Sync Adjustment

- Used to automatically adjust a computer image.
- Select whether the image is to be synchronized automatically when switching the signal with “ON” or “OFF”.

OFF ( )
- Synchronized adjustment is not automatically performed.
- Press **AUTO SYNC** to perform manual adjustment.

ON ( )
- Synchronized adjustment is automatically performed.

① Press **MENU**. The “Picture” menu screen appears.

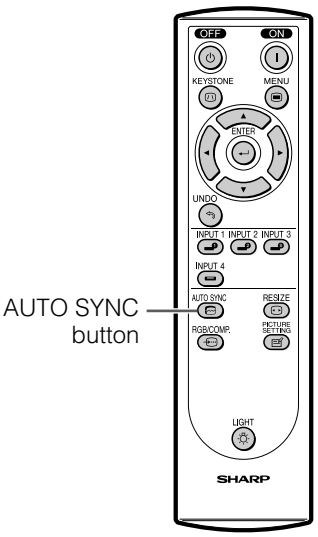
② Press ◄/► to display the “Fine Sync” menu screen.

③ Press ▲/▼ to select “Auto Sync”.

④ Press ◄/► to select “ON” or “OFF”.

⑤ To exit the menu screen, press **MENU**.

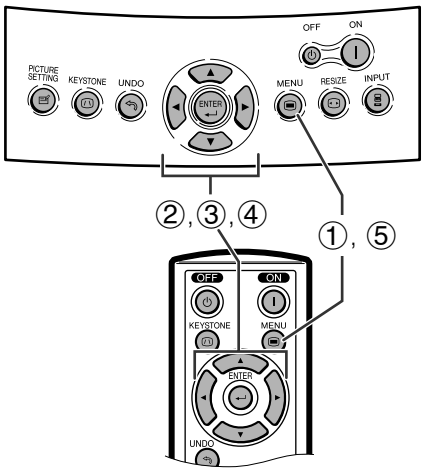
NOTE
- When the optimum image cannot be achieved with Auto Sync adjustment, use manual adjustments. (See page 33.)
- The Auto Sync adjustment may take some time to complete, depending on the image of the computer connected to the projector.



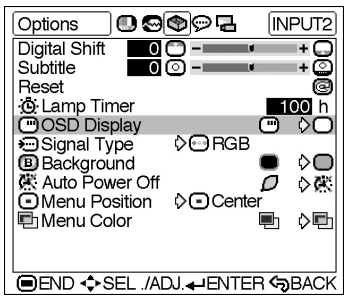
Auto Sync Adjustment Using the Remote Control

① Press **AUTO SYNC** button on the Remote Control. Synchronized adjustment starts.

Turning On/Off the On-screen Display



On-screen Display



This function allows you to turn on or off the on-screen messages that appear during input select.

Description of OSD Display

Selected item	Description
ON ( )	All On-screen Display are displayed.
OFF ( )	INPUT is not displayed.

① Press **MENU**. The “Picture” menu screen appears.

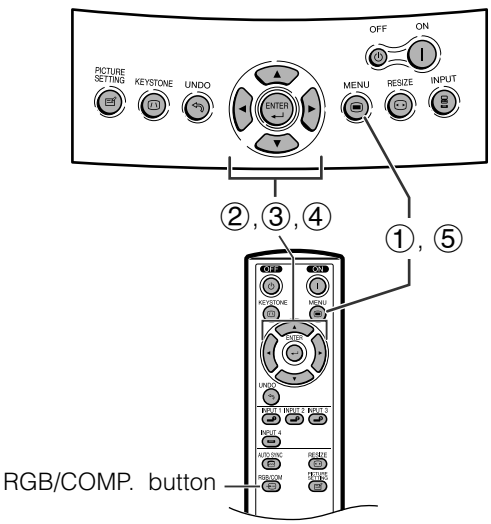
② Press ◄/► to display the “Options” menu screen.

③ Press ▲/▼ to select “OSD Display”.

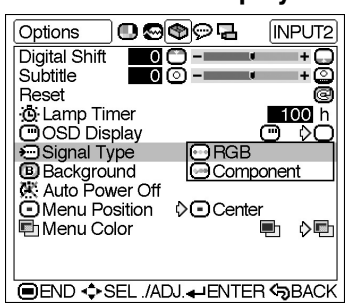
④ Press ◄/► to select “ON” ( ) or “OFF” ( ).

⑤ To exit the menu screen, press **MENU**.

Selecting the Signal Type



On-screen Display



This function allows you to select the input signal type Component or RGB for INPUT 2.

① Press **MENU**. The “Picture” menu screen appears.

② Press ◄/► to display the “Options” menu screen.

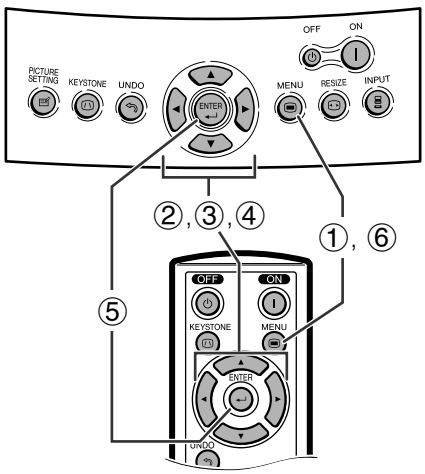
③ Press ▲/▼ to select “Signal Type”, and then press ►.

④ Press ▲/▼ to select “RGB” or “Component”.

⑤ To exit the menu screen, press **MENU**.

“RGB” or “Component” can be selected with the **RGB/COMP.** button on the remote control only in INPUT 2.

Setting the Video Signal (VIDEO menu only)



The video input system mode is preset to “Auto”; however, it can be changed to a specific system mode if the selected system mode is not compatible with the connected audiovisual equipment.

① Press **MENU**. The “Picture” menu screen appears.

② Press ◄/► to display the “Options” menu screen.

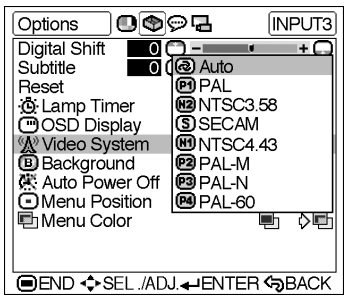
③ Press ▲/▼ to select “Video System”, and then press ►.

④ Press ▲/▼ to select the desired video system mode.

⑤ Press **ENTER** to save the setting.

⑥ To exit the menu screen, press **MENU**.

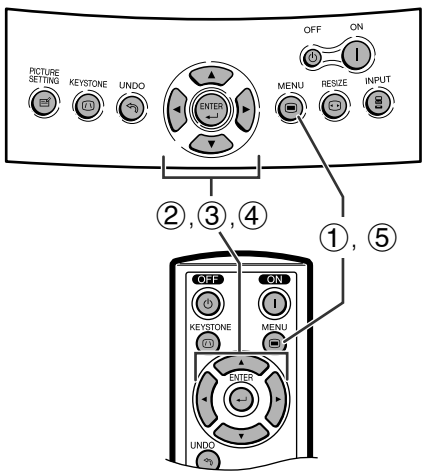
On-screen Display



NOTE

- When the system mode is set to “Auto”, you may not receive a clear picture due to signal differences. Should this occur, switch to the video system of the source signal.
- “Auto” cannot be set for PAL-M and PAL-N input signals. Select “PAL-M” or “PAL-N” in “Video System” menu for PAL-M and PAL-N input signals.

Selecting a Background Image



This function allows you to select the image displayed when no signal is being sent to the projector.

Description of Background Images

Selected item	Description
Blue ( )	Blue screen
None ( )	Black screen

① Press **MENU**. The “Picture” menu screen appears.

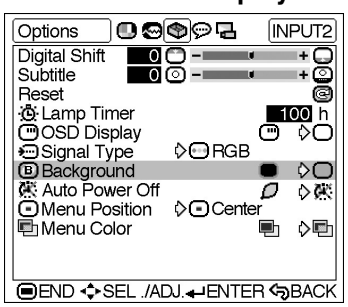
② Press ◄/► to display the “Options” menu screen.

③ Press ▲/▼ to select “Background”.

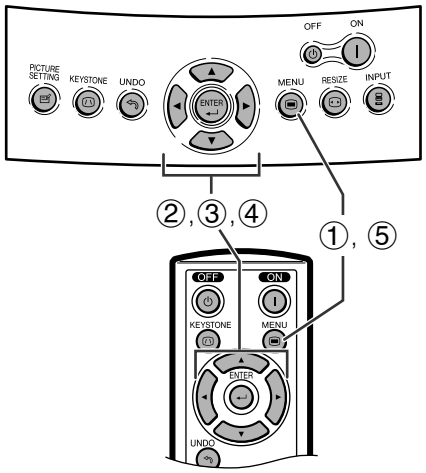
④ Press ◄/► to select the background image you want to display on the screen.

⑤ To exit the menu screen, press **MENU**.

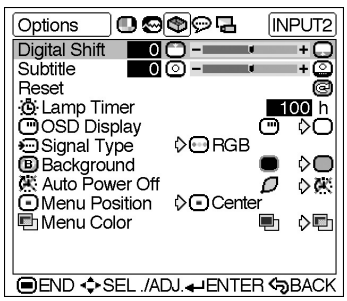
On-screen Display



Adjustments for the Screen Position and Size



On-screen Display



You can adjust settings according to the position and size of the screen.

Description of Adjustment Items

Selected item	Description
Digital Shift	Adjusts the vertical position of the image.
Subtitle	Adjusts the vertical size of the image.
Reset	Digital Shift and Subtitle adjustments are returned to the factory preset settings.

Digital Shift Setting

This function allows you to adjust the vertical position of the image.

Description of Digital Shift

– ◄ button	+ ► button
The image moves down.	The image moves up.

① Press **MENU**. The “Picture” menu screen appears.

② Press ◄/► to display the “Options” menu screen.

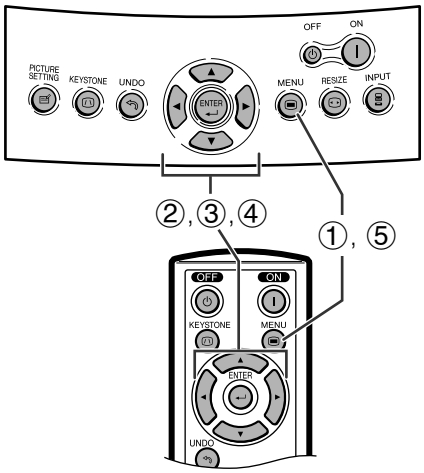
③ Press ▲/▼ to select “Digital Shift”.

④ Press ◄/► to move the ▮ mark of the Digital Shift setting.

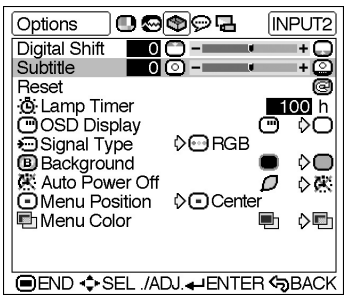
⑤ To exit the menu screen, press **MENU**.

NOTE

- The “Digital Shift” cannot be adjusted when Keystone correction is applied.



On-screen Display



Subtitle Setting

With this function, you can adjust the vertical size of the display to allow for subtitles.

Description of Subtitle Setting

– ◄ button	+ ► button
The image is compressed by adjusting the vertical size of the display.	The image is enlarged by adjusting the vertical size of the display.

① Press **MENU**. The “Picture” menu screen appears.

② Press ◄/► to display the “Options” menu screen.

③ Press ▲/▼ to select “Subtitle”.

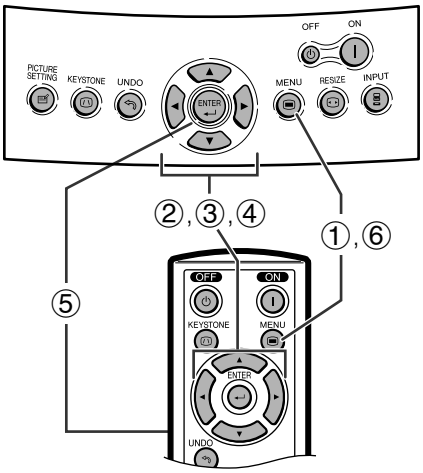
④ Press ◄/► to move the ▮ mark of the Subtitle setting.

⑤ To exit the menu screen, press **MENU**.

NOTE

- When changing the screen with the Subtitle setting, not only the bottom of the screen rises, but also the upper part is changed to a certain point.
- The subtitle setting can be adjusted more effectively with the Digital Shift function.
- The “Subtitle” cannot be adjusted when Keystone correction is applied.

Selecting the Menu Screen Position



This function allows you to select the desired position of the menu screen.

Description of Menu Position

Selected item	Description
Center	The menu is displayed on the centre of the image.
Upper Right	The menu is displayed on the upper right of the image.
Lower Right	The menu is displayed on the lower right of the image.
Upper Left	The menu is displayed on the upper left of the image.
Lower Left	The menu is displayed on the lower left of the image.

① Press **MENU**. The “Picture” menu screen appears.

② Press ◄/► to display the “Options” menu screen.

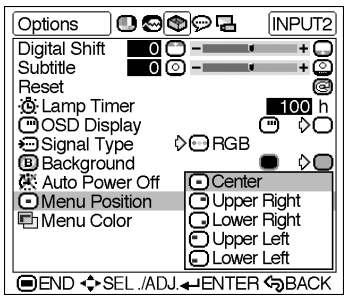
③ Press ▲/▼ to select “Menu Position”, and then press ►.

④ Press ▲/▼ to select the desired menu position.

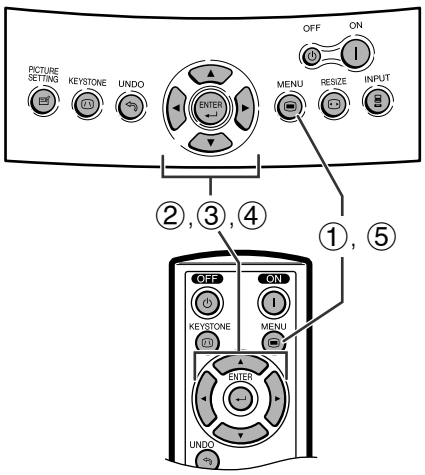
⑤ Press **ENTER** to save the setting.

⑥ To exit the menu screen, press **MENU**.

On-screen Display



Selecting the Menu Colour



This function allows you to select the colour of the menu screen.

Description of Menu colour

Selected item	Description
Opaque ( )	The menu is displayed opaquely.
Translucent ( )	The menu is displayed translucently. The part of the menu on the image becomes transparent.

① Press **MENU**. The “Picture” menu screen appears.

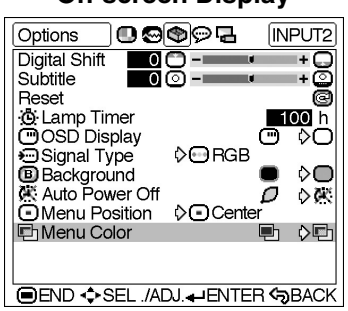
② Press ◄/► to display the “Options” menu screen.

③ Press ▲/▼ to select “Menu Color”.

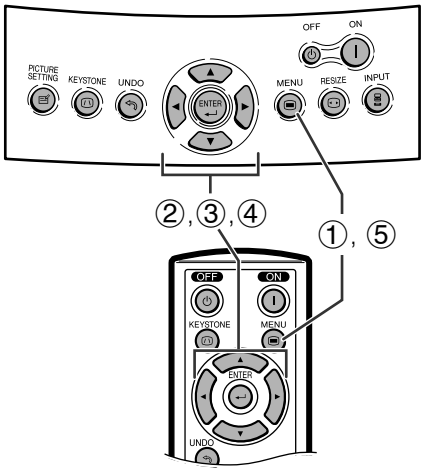
④ Press ◄/► to select “Opaque” ( ) or “Translucent”( ).

⑤ To exit the menu screen, press **MENU**.

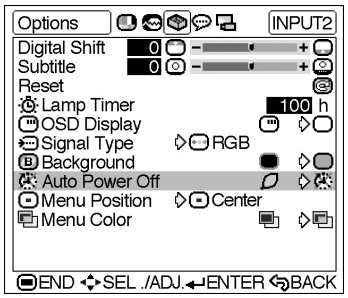
On-screen Display



Automatic Power Shut-off Function



On-screen Display



When no input signal is detected for more than 15 minutes, the projector will automatically shut off. The on-screen message on the left will appear five minutes before the power is automatically turned off.

Description of Automatic Power Shut-off

Selected item	Description
	Power automatically shuts off after 15 minutes without an input signal.
	Automatic Power Shut-off disabled.

① Press **MENU**. The “Picture” menu screen appears.

② Press ◄/► to display the “Options” menu screen.

③ Press ▲/▼ to select “Auto Power Off”.

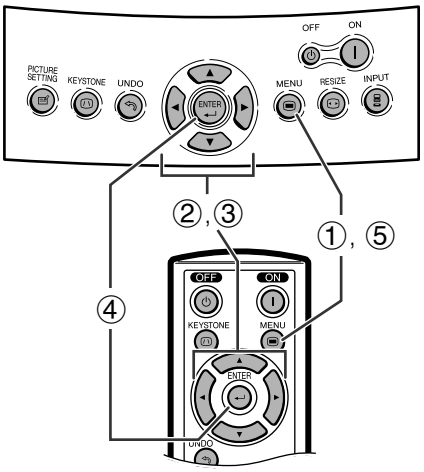
④ Press ◄/► to select “ ” or “ ”.

⑤ To exit the menu screen, press **MENU**.

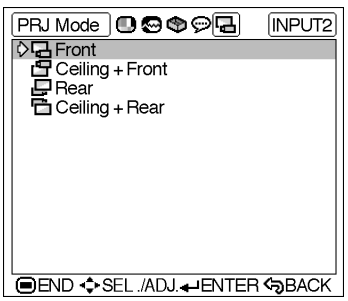
NOTE

- “Auto Power Off” is factory preset to “ ”.
- When the Auto Power Off function is set to “ (On)”, 5 minutes before the power turns off, the message “Power OFF in X min.” will appear on the screen to indicate the remaining minutes.

Reversing/Inverting Projected Images



On-screen Display



This projector is equipped with a reverse/invert image function which allows you to reverse or invert the projected image for various applications.

Description of Projected Images

Selected item	Description
Front	Normal image
Ceiling + Front	Inverted image
Rear	Reversed image
Ceiling + Rear	Reversed and inverted image

① Press **MENU**. The "Picture" menu screen appears.

② Press ◄/► to display the "PRJ Mode" menu screen.

③ Press ▲/▼ to select the desired projection mode.

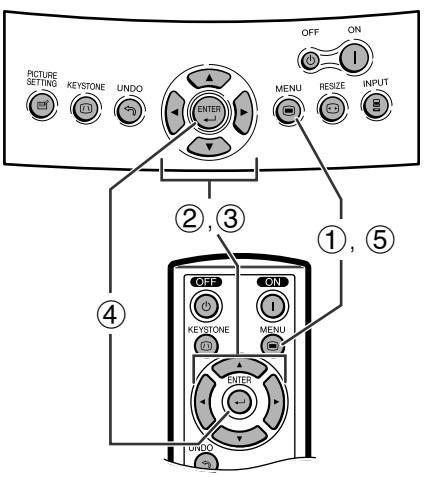
④ Press **ENTER** to save the setting.

⑤ To exit the menu screen, press **MENU**.

NOTE

- This function is used for the reversed image and ceiling-mount setups. See page 23 for these setups.

Selecting the On-screen Display Language



On-screen Display

English is the preset language for the On-screen Display; however, this can be changed to German, Spanish, Dutch, French, Italian, Swedish, Portuguese, Chinese, Korean or Japanese.

① Press **MENU**. The "Picture" menu screen appears.

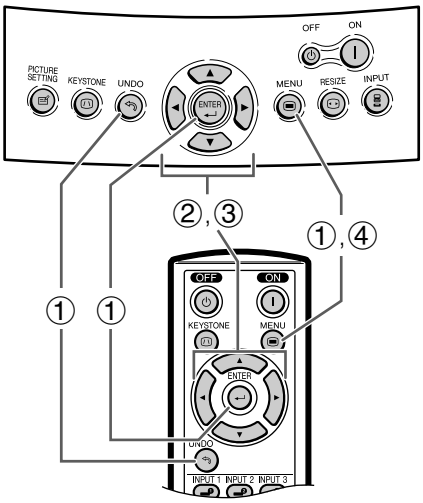
② Press ◄/► to display the "Language" menu screen.

③ Press ▲/▼ to select the desired language.

④ Press **ENTER** to save the setting. The On-screen Display is now programmed to display in the language selected.

⑤ To exit the menu screen, press **MENU**.

Advanced Picture Adjustment



Detailed picture adjustments can be made in addition to the adjustments on the normal menu screen.

Selected	◄ button	► button
R-Contrast	For less contrast of red colour	For more contrast of red colour
G-Contrast	For less contrast of green colour	For more contrast of green colour
B-Contrast	For less contrast of blue colour	For more contrast of blue colour
R-Brightness	For less brightness of red colour	For more brightness of red colour
G-Brightness	For less brightness of green colour	For more brightness of green colour
B-Brightness	For less brightness of blue colour	For more brightness of blue colour
Reset	All image adjustment items are returned to the factory preset settings.	

① The “Advanced” menu appears when the buttons are pressed in the order shown below.

ENTER - ENTER - UNDO - UNDO - ENTER - ENTER - MENU

② Press ▲/▼ to select a specific adjustment item.

③ Press ◄/► to move the ▮ mark of the selected adjustment item to the desired setting.

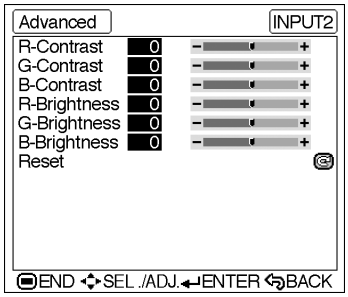
④ To exit the menu screen, press **MENU**.

NOTE

- To reset all adjustment items, “Reset” in the "Picture" menu screen and press **ENTER**.
- Advanced adjustment values are stored in all modes.

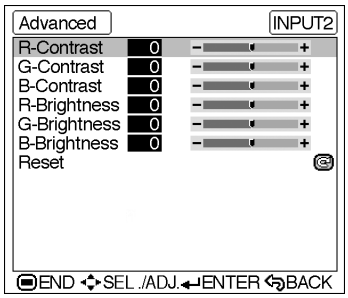
On-screen Display

①



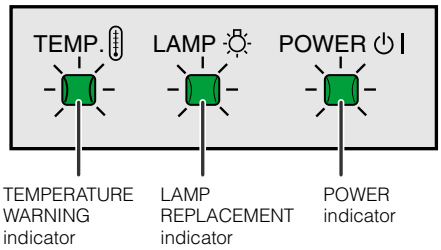
On-screen Display

②



Lamp/Maintenance Indicators

Maintenance Indicators



- The warning lights on the projector indicate problems inside the projector.
- There are two types of warning lights: a TEMPERATURE WARNING indicator that warns you when the projector is too hot, and a LAMP REPLACEMENT indicator that warns you when to change the lamp.
- If a problem occurs, either the TEMPERATURE WARNING indicator or the LAMP REPLACEMENT indicator will illuminate in red. After turning off the power, follow the procedures given below.

Maintenance Indicator	Condition	Problem	Possible Solution
TEMPERATURE WARNING indicator	The internal temperature is abnormally high.	• Blocked air intake.	• Relocate the projector to an area with proper ventilation.
		• Clogged ventilative hole.	• Clean the ventilative holes. (See page 49.)
		• Cooling fan breakdown. • Internal circuit failure.	• Take the projector to your nearest Sharp Authorised Projector Dealer or Service Centre for repair.
LAMP REPLACE-MENT indicator	The lamp does not light up.	• Burnt-out lamp. • Lamp circuit failure.	• Carefully replace the lamp. (See page 46.) • Take the projector to your nearest Sharp Authorised Projector Dealer or Service Centre for repair.
	The lamp requires replacement.	• Lamp has been used for over 2,400 hours.	

NOTE

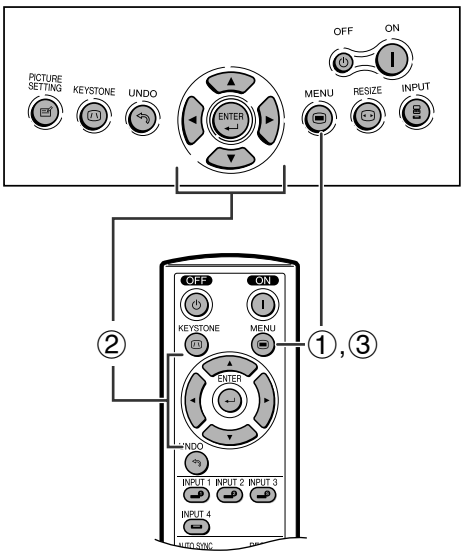
- If the TEMPERATURE WARNING indicator lights up, follow the above possible solutions and then wait until the projector has cooled down completely before turning the power back on. (At least 5 minutes.)
- If the power is turned off and then turned on again, for example during a brief rest, the LAMP REPLACEMENT indicator may be triggered, preventing the power from going on. Should this occur, unplug the power cord from the wall outlet and plug it back in again.

Confirming the Lamp Usage Time

The lamp in this projector operates for approximately 2,500 cumulative hours, depending on the usage environment. (As the usage environment can vary significantly, the projector lamp may not operate for 2,500 hours.) It is recommended that the lamp be replaced after approximately 2,400 cumulative hours of use or when you notice a significant deterioration of the picture and colour quality. The lamp usage time can be checked with the On-screen Display.

CAUTION

- Intense light hazard. Do not attempt to look into the aperture and lens while the projector is operating.



This function allows you to check the accumulated lamp usage time.

① Press **MENU**. The "Picture" menu screen appears.

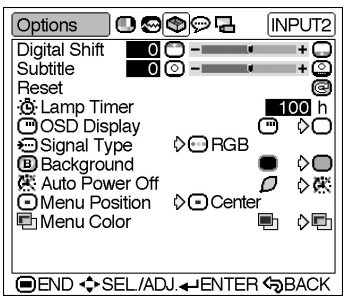
② Press ◀/▶ to display the "Options" menu screen. The lamp usage time will be displayed in "Lamp Timer".

③ To exit the menu screen, press **MENU**.

NOTE

- It is recommended that the lamp be replaced after approximately 2,400 cumulative hours of use. See page 46 for lamp replacement.

On-screen Display



Condition	Problem	Possible Solution
The LAMP REPLACEMENT indicator illuminates in red, and "LAMP" and "▩" will blink in yellow in the lower-left corner of the image.	• Lamp has been used for over 2,400 hours.	• Purchase a replacement lamp unit (lamp/cage module) of the current type BQC-XVZ90+++1 from your nearest Sharp Authorised Projector Dealer or Service Centre. • Replace the lamp. (See page 46.) If you wish, you may have the lamp replaced at your nearest Sharp Authorised Projector Dealer or Service Centre.
A significant deterioration of the picture and colour quality occurs.		
The power will automatically turn off and the projector will enter standby mode.	• Lamp has been used for over 2,500 hours.	
"LAMP" and "▩" will blink in red in the lower-left corner of the image, and the power will turn off.		

Replacing the Lamp

⚠ CAUTION

- **There is potential glass particles hazard if the lamp ruptures. In case of lamp rupture, contact your nearest Sharp Authorised Projector Dealer or Service Centre for replacement.**
- **Do not remove the lamp cage directly after operation of the projector. The lamp may be extremely hot. Wait at least one hour after the power cord is disconnected to allow the surface of the lamp cage to fully cool down before removing the lamp cage.**

It is recommended that the lamp be replaced after approximately 2,400 cumulative hours of use or when you notice a significant deterioration of the picture and colour quality. Carefully change the lamp by following the steps on the next page.

If the new lamp does not light after replacement, take your projector to the nearest Sharp Authorised Projector Dealer or Service Centre for repair. Purchase a replacement lamp unit (lamp/cage module) of the current type BQC-XVZ90+++1 from your nearest Sharp Authorised Projector Dealer or Service Centre. Then carefully change the lamp by following the instructions on the next page. If you wish, you may have the lamp replaced at your nearest Sharp Authorised Projector Dealer or Service Centre.

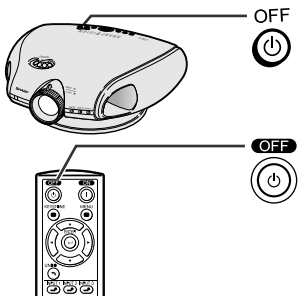
Removing and installing the lamp unit

CAUTION

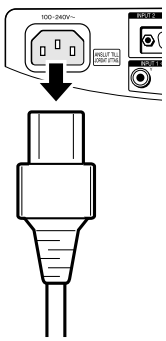
- Be sure to remove the lamp cage by the handle. Do not touch the glass surface of the lamp cage or the inside of the projector.
- To avoid injury to yourself and damage to the lamp, carefully follow the steps below.
- Replace the lamp after turning off the power and unplugging the power cord.

1 Turn off the power.

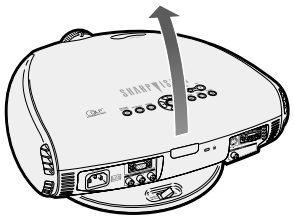
Press **POWER OFF**. Wait until the cooling fan stops running.



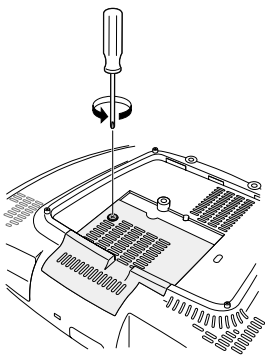
2 Unplug the power cord.



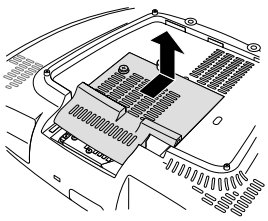
3 Remove the Swivel Stand. (See page 17.)



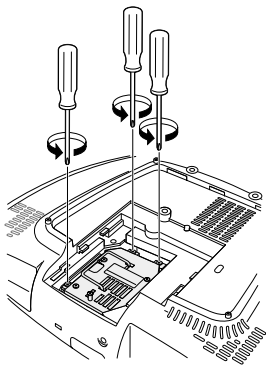
4 Loosen the user service screw that secures the lamp cage cover.



5 Slide the lamp cage cover in the direction of the arrow.

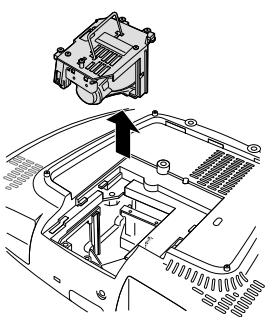


6 Loosen and remove the three-securing screws from the lamp cage.

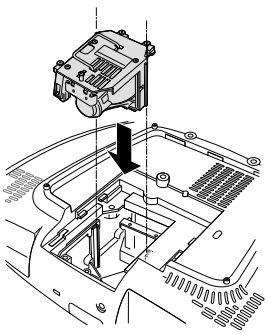


User service screws

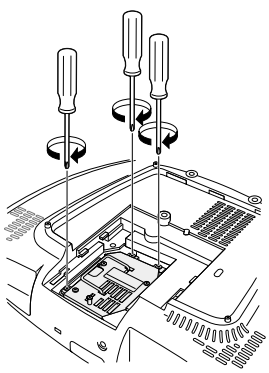
7 Remove the lamp cage.



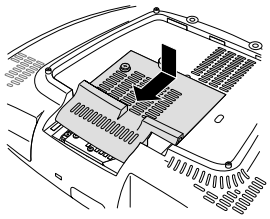
8 Insert the new lamp cage firmly into the lamp cage compartment.



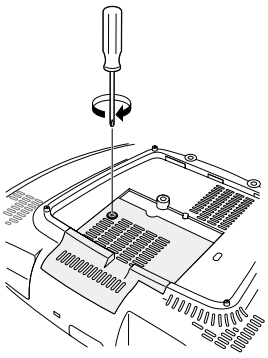
9 Tighten the three-securing screws to fasten the lamp cage.



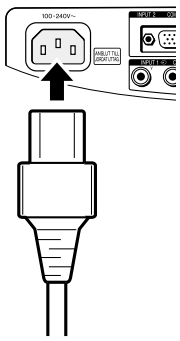
10 Attach the lamp unit cover.



11 Tighten the user service screw to fasten the lamp cage cover.

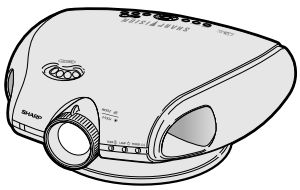


12 Plug the power cord.



13 Press POWER ON on the projector to reset the lamp timer.

Press ON, INPUT, UNDO, ◄, ENTER and ► in order. Then press ON.



"LAMP 0000H" is displayed on the screen.

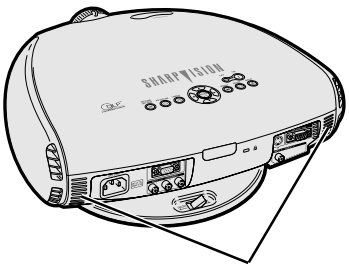
NOTE

- You need to reset the lamp timer every time you replace the lamp and confirm it is reset on the "Lamp Timer" menu.

Cleaning the Ventilative Holes

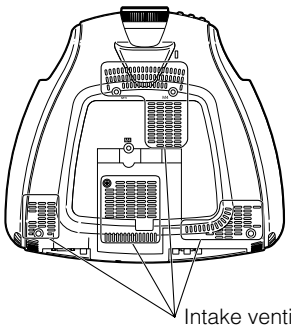
- This projector is equipped with ventilative holes to ensure the optimal operating condition of the projector.
- Periodically clean the ventilative hole by vacuuming it off with a vacuum cleaner.
- The ventilative holes should be cleaned every 100 hours of use. Clean the ventilative holes more often when the projector is used in a dirty or smoky location.

Side and Rear view



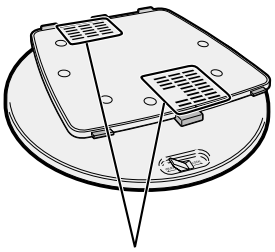
Intake ventilative holes

Bottom view



Intake ventilative holes

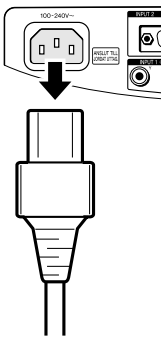
Swivel stand



Intake ventilative holes

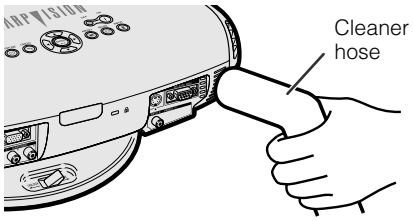
How to clean the ventilative holes

1 Unplug the power cord.



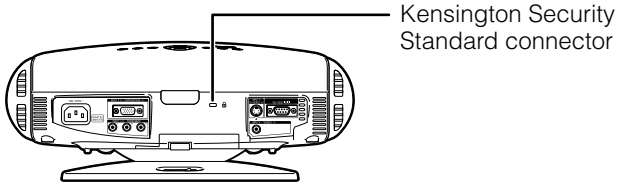
2 Cleaning.

Clean the dust off by putting the cleaner hose on the intake ventilative holes.



Using the Kensington Lock

Rear View



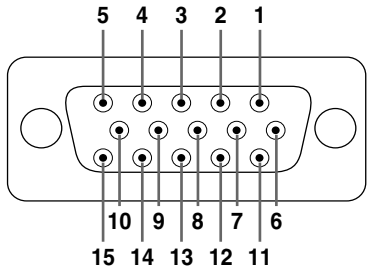
This projector has a Kensington Security Standard connector for use with a Kensington MicroSaver Security System. Refer to the information that came with the system for instructions on how to use it to secure the projector.

Troubleshooting

Problem	Check
No picture appears.	• Projector power cord is not plugged into the wall outlet. • Selected input is wrong. (See page 24.) • Cables incorrectly connected to back panel of the projector. (See pages 12–15.) • “Contrast” and “Bright” adjustments are set to minimum position. (See page 43.)
Colour is faded or poor.	• Picture adjustments are not correct. (See page 43.)
Picture is blurred.	• Adjust the focus. (See page 16.) • Projection distance is too long or too short to allow for proper focus. (See pages 21 and 22.)
No OSD appears.	• OSD Display is set to “OFF”, preventing to display some or all On-screen Displays. (See page 36.)
An unusual sound is occasionally heard from the cabinet.	• If the picture is normal, the sound is due to cabinet shrinkage caused by temperature changes. This will not affect operation or performance of the projector.
Maintenance indicator illuminates.	• Refer to “Lamp/Maintenance Indicators” on page 44.
Picture noise appears.	• Adjust the “Phase” setting. (See page 33.)
Image is green on INPUT 2 COMPONENT. Image is pink (no green) on INPUT 2 RGB.	• Change the input signal type. (See page 36.)

Connecting Pin Assignments

INPUT 2 COMPONENT/RGB Port: 15-pin Mini D-sub female connector



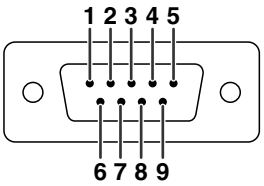
• RGB Input

Pin No.	Signal	Pin No.	Signal
1	Video input (red)	8	Ground (blue)
2	Video input (green/sync on green)	9	Not connected
3	Video input (blue)	10	Ground
4	Not connected	11	Ground
5	Composite sync	12	Bi-directional data
6	Ground (red)	13	Horizontal sync signal
7	Ground (green/sync on green)	14	Vertical sync signal
		15	Data clock

• Component Input

Pin No.	Signal	Pin No.	Signal
1	Video input P_R (C_R)	8	Ground (P_B)
2	Video input Y	9	Not connected
3	Video input P_B (C_B)	10	Not connected
4	Not connected	11	Not connected
5	Not connected	12	Not connected
6	Ground (P_R)	13	Not connected
7	Ground (Y)	14	Not connected
		15	Not connected

RS-232C Port: 9-pin D-sub male connector of the DIN-D-sub RS-232C cable



Pin No.	Signal	Name	I/O	Reference
1				Not connected
2	RD	Receive Data	Input	Connected to internal circuit
3	SD	Send Data	Output	Connected to internal circuit
4		Reserved		Connected to internal circuit
5	SG	Signal Ground		Connected to internal circuit
6		Reserved		Connected to internal circuit
7		Reserved		Connected to internal circuit
8		Reserved		Connected to internal circuit
9				Not connected

(RS-232C) Specifications and Command Settings

PC control

A computer can be used to control the projector by connecting an RS-232C cable (null modem, cross type, commercially available) to the projector. (See page 14 for connection.)

Communication conditions

Set the serial port settings of the computer to match those of the table on the next page.
Signal format: Conforms to RS-232C standard.
Baud rate: 9,600 bps
Data length: 8 bits
Parity bit: NONE
Stop bit: 1 bit
Flow control: None

Basic format

Commands from the computer are sent in the following order: command, parameter, and return code. After the projector processes the command from the computer, it sends a response code to the computer.

Command format

C1	C2	C3	C4	P1	P2	P3	P4	Return code (0DH)

Command 4-digits Parameter 4-digits

Response code format

Normal response

O	K	Return code (0DH)

Problem response (communication error or incorrect command)

E	R	R	Return code (0DH)

When more than one code is being sent, send each command only after the OK response code for the previous command from the projector is verified.

NOTE

- When using the computer control function of the projector, the projector operating status cannot be read to the computer. Therefore, confirm the status by transmitting the display commands for each adjustment menu and checking the status with the On-screen Display.

Commands

EXAMPLE

- When power on.

Computer										Projector		
P	O	W	R	_	_	_	1	↵	→ ←	O	K	↵

	CONTROL CONTENTS	COMMAND				PARAMETER				RETURN
BUTTONS & REMOTE CONTROL BUTTONS	POWER ON	P	O	W	R	_	_	_	1	OK OR ERR
	POWER OFF	P	O	W	R	_	_	_	0	OK OR ERR
	INPUT 1 (COMPONENT 1)	I	V	E	D	_	_	_	1	OK OR ERR
	INPUT 2 (COMPONENT 2)	I	V	E	D	_	_	_	2	OK OR ERR
	INPUT 3 (S-VIDEO)	I	V	E	D	_	_	_	3	OK OR ERR
	INPUT 4 (VIDEO)	I	V	E	D	_	_	_	4	OK OR ERR

NOTE

- If an underbar (_) appears in the parameter column, enter a space.

Computer Compatibility Chart

Horizontal Frequency: 15–70 kHz
Vertical Frequency: 43–75 Hz
Pixel Clock: 12–110 MHz
Compatible with sync on green
XGA compatible in intelligent compression

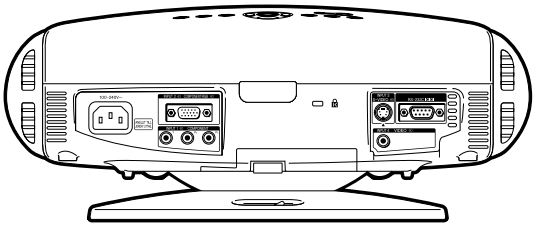
PC/ MAC/ WS	Resolution		Horizontal Frequency (kHz)	Vertical Frequency (Hz)	VESA Standard	Display
PC	VGA	640 × 350	27.0	60		Upscale
			31.5	70		
		720 × 350	27.0	60		
			31.5	70		
		640 × 400	27.0	60		
			31.5	70		
		720 × 400	27.0	60		
			31.5	70		
		640 × 480	26.2	50		
			31.5	60	✔	
			34.7	70		
			37.9	72	✔	
			37.5	75	✔	
	SVGA	800 × 600	31.4	50		True
			35.1	56	✔	
			37.9	60	✔	
			44.5	70		
			48.1	72	✔	
			46.9	75	✔	
	XGA	1,024 × 768	35.5	43	✔	Intelligent Compression
			40.3	50		
			56.5	70	✔	
			58.1	72		
	—	1,280 × 720	45.0	60		
PC/ MAC 13"	VGA	640 × 480	34.9	67		Upscale
MAC 16"	SVGA	832 × 624	46.8	75		Intelligent Compression
			49.6	75		
PC/ MAC 19"	XGA	1,024 × 768	48.4	60	✔	
			60.0	75	✔	

NOTE

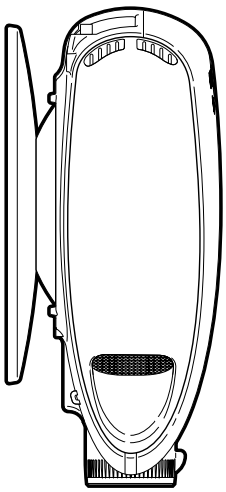
- This projector may not be able to display images from notebook computers in simultaneous (CRT/LCD) mode. Should this occur, turn off the LCD display on the notebook computer and output the display data in “CRT only” mode. Details on how to change display modes can be found in your notebook computer’s operation manual.

Dimensions

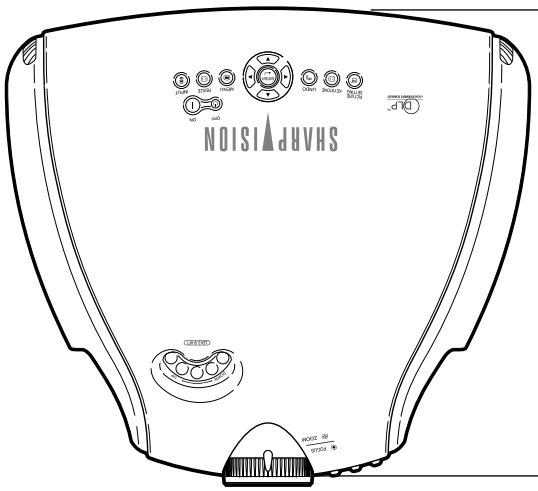
Rear View



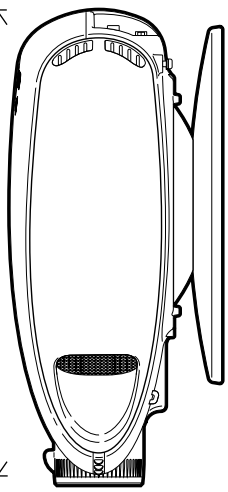
Side View



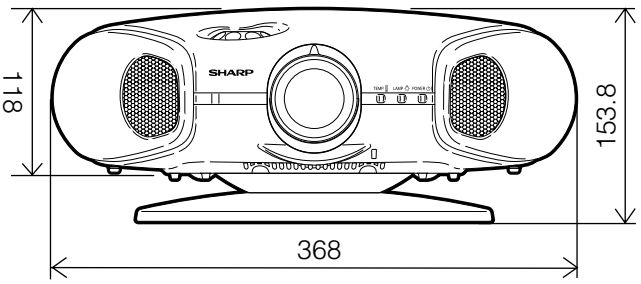
Top View



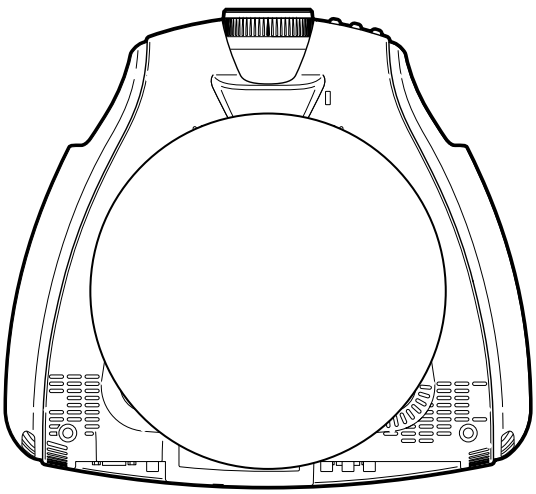
Side View



Front View



Bottom View



Units: mm

Specifications

Product type	Projector
Model	XV-Z91E
Video system	PAL/PAL 60/PAL-M/PAL-N/SECAM/NTSC 3.58/NTSC 4.43 DTV 480I/480P/720P/1080I
Display method	DLP chip, RGB optical shutter method
DLP panel	Panel size: 0.55″ Display method: Single Panel Digital Micromirror Device (DMD™) by Texas Instruments Drive method: Digital Light Processing (DLP™) No. of dots: 480,000 dots (800 [H] × 600 [V])
Lens	1–1.2 × zoom lens, F3.0, f=32.5–44.0 mm
Projection lamp	150 W SHP lamp
Video input signal	RCA Connector: VIDEO (INPUT 4), composite video, 1.0 Vp-p, sync negative, 75 Ω terminated
S-video input signal	4-pin Mini DIN connector (INPUT 3) Y (luminance signal): 1.0 Vp-p, sync negative, 75 Ω terminated C (chrominance signal): Burst 0.286 Vp-p, 75 Ω terminated
Component input signal (INPUT 1)	RCA Connector Y: 1.0 Vp-p, sync negative, 75 Ω terminated P_B: 0.7 Vp-p, 75 Ω terminated P_R: 0.7 Vp-p, 75 Ω terminated
Component input signal (INPUT 2)	15-pin connector Analog 0.7 Vp-p 75 Ω Y: 1.0 Vp-p, sync negative, 75 Ω terminated P_B: 0.7 Vp-p, 75 Ω terminated P_R: 0.7 Vp-p, 75 Ω terminated
Component RGB input signal (INPUT 2)	15-pin connector RGB separate/sync on green type analog input: 0–0.7 Vp-p, positive, 75 Ω terminated HORIZONTAL SYNC. SIGNAL: TTL level (positive/negative) VERTICAL SYNC. SIGNAL: Same as above
Horizontal resolution	520 TV lines (NTSC 3.58 input)
RGB input signal	15-PIN MINI D-SUB CONNECTOR (INPUT 2): RGB separate/composite sync/sync on green type analog input: 0–0.7 Vp-p, positive, 75 Ω terminated HORIZONTAL SYNC. SIGNAL: TTL level (positive/negative) or composite sync (Apple only) VERTICAL SYNC. SIGNAL: Same as above
Pixel clock	12–110 MHz
Vertical frequency	43–75 Hz
Horizontal frequency	15–70 kHz
Computer control signal	9-pin D-sub connector (RS-232C Port)
Rated voltage	AC 100–240 V
Input current	2.1 A
Rated frequency	50/60 Hz
Power consumption	200 W
Heat dissipation	750 BTU/hour
Operating temperature	+5°C to +35°C
Storage temperature	−20°C to +60°C
Cabinet	Plastic
I/R carrier frequency	38 kHz
Dimensions (approx.)	368 (W) × 153.8 (H) × 327 (D) mm (including swivel stand) 368 (W) × 118 (H) × 327 (D) mm (main body only)
Weight (approx.)	4.3 kg (including swivel stand) 3.8kg (main body only)
Supplied accessories	Remote control, Two AA size batteries, Power cord, Computer RGB cable, 21 pin RCA conversion adaptor, Video cable, Terminal cover, Screws for terminal cover, Lens cap (attached on the body), Lens cap strap, Operation manual
Replacement parts	Lamp unit (Lamp/cage module) (BQC-XVZ90+++1), Remote control (RRMCGA099WJSA), AA size batteries, Power cord for Europe except U.K. (QACCV4002CEZZ), Power cord for U.K., Hong Kong and Singapore (QACCBA012WJPZ), Power cord for Australia and New Zealand (QACCL3022CEZZ), Computer RGB cable (QCNW-5050CEZZ), 21 pin RCA conversion adaptor (QSOCZ0361CEZZ), Video cable (QCNWGA001WJZZ), Terminal cover (GCOVAA116WJKA), Screws for terminal cover (XBBSN40P10000), Lens cap (CCAPHA004WJ01), Lens cap strap (UBNDT0013CEZZ), Operation manuals; for European 7 languages (TINS-A645WJZZ) / for Chinese, Korean and Arabic (TINS-A646WJZZ)

This SHARP projector uses a DMD chip. This very sophisticated chip contains 480,000 pixels. As with any high technology electronic equipment such as large screen TVs, video systems and video cameras, there are certain acceptable tolerances that the equipment must conform to.

Specifications are subject to change without notice.

Glossary

Aspect ratio
Width and height ratio of an image. The normal aspect ratio of a computer and video image is 4 : 3. There are also wide images with an aspect ratio of 16 : 9 and 21 : 9.

Auto Sync
Optimises projected computer images by automatically adjusting certain characteristics.

Background
Initial setting image projected when no signal is being input.

Clock
Clock adjustment is used to adjust vertical noise when clock level is incorrect.

CLR Temp (Colour temperature)
Function that can be used to adjust the colour temperature to suit the type of image input to the projector. Decrease the colour temperature to create warmer, reddish images for natural flesh tones, or increase to create cooler, bluish images for a brighter picture.

Composite sync
Signal combining horizontal and vertical sync pulses.

Digital keystone correction
Function to digitally correct a distorted image when the projector is set up at an angle, smoothes out jaggies on keystone images and compresses the image not only horizontally but vertically keeping the 4 : 3 aspect ratio.

Digital shift
Shifts image up or down easily by ▲/▼ buttons when RESIZE mode of input image is NORMAL, BORDER, or STRETCH of COMPUTER, VIDEO and DTV inputs.

GAMMA
Image quality enhancement function that offers a richer image by brightening the darker portions of the image without altering the brightness of the brighter portions. You can select from four different modes: Standard, Black Detail, White Detail and Brighten.

Intelligent compression and expansion
High quality resizing of lower and higher resolution images to fit the projector's native resolution.

Phase
Phase shift is a timing shift between isomorphic signals with the same resolution. When phase level is incorrect, the projected image typically displays horizontal flicker.

RESIZE
Allows you to modify or customize the picture display mode to enhance the input image. You can select from four different modes: NORMAL, FULL, BORDER and STRETCH.

RS-232C
Function to control the projector from the computer by using the RS-232C ports on the projector and computer.

Stretch
Mode that stretches the 4:3 image horizontally to display it on the wide screen.

Sync on green
Video signal mode of a computer which overlaps horizontal and vertical sync signal to green colour signal pin.

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SHARP CORPORATION

Printed in Japan
In Japan gedruckt
Imprimé au Japon
Triykt i Japan
Impreso en Japón
Stampato in Giappone
Gedrukt in Japan
TINS-A645WJZZ